CDX-A10/CDX-J10/XT-10

SERVICE MANUAL

CDX-A10: *US Model*
Canadian Model
CDX-J10: *AEP Model*
E Model

Discard CDX-A10/XT-10
SERVICE MANUAL
(No. 9-952-124-11)
previously issued.

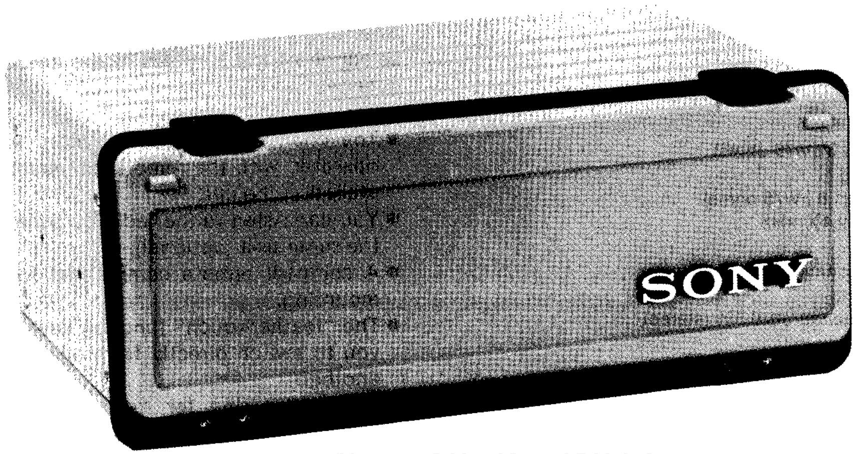


Photo: CDX-A10 or CDX-J10

CDjuke

SPECIFICATIONS

System	Compact disc digital audio system
Disc	Compact disc
Laser diode properties	Material: GaAlAs Wave length: 780 nm Emission duration: Continuous Laser output: Max. 0.4 mW*

*This output is the value measured at a distance of about 1.6 mm from the objective lens surface on the Optical Pick-up Block.

Spindle speed	200 r.p.m. to 500 r.p.m. (CLV)
Error correction	Sony Super Strategy Cross Interleave Reed Solomon Code

Number of channels	2
D-A conversion	16-bit linear
Frequency response	5–20,000 Hz ±1 dB
Harmonic distortion	0.022% (1 kHz)
Dynamic range	80 dB
Signal to noise ratio	80 dB
Wow and flutter	Below measurable limit
Tone controls	Bass ±8 dB (100 Hz) Treble ±8 dB (10 kHz)
Outputs	Line output

Disc

Track pitch	1.6 μm
Sampling frequency	44.1 kHz
Quantization	16 bit linear quantizing/channel
Modulation system	EFM
Transfer rate	2.03 Mbit/sec. (before modulation)

— Continued on page 2 —

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE TRAME ET UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

CAUTION

- Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

MICROFILM

COMPACT DISC PLAYER

SONY®

AUD

Tuner section (When the XT-10 tuner unit is connected to the unit.)

FM tuner section

Tuning range	87.9-107.9 MHz
Antenna terminal	FM/AM external antenna connector
Intermediate frequency	10.7 MHz
Usable sensitivity	9.3 dBf (0.8 μV/75 ohms)
Sensitivity at 50 dB quieting	15.3 dBf (1.6 μV/75 ohms)
Selectivity	75 dB at ±400 kHz
Signal-to-noise ratio	70 dB (monaural), 67 dB (stereo)
Harmonic distortion at 1 kHz	0.15% (monaural), 0.3% (stereo)
Separation	42 dB
Frequency response	30 Hz-15,000 Hz ±3 dB

AM tuner section

Tuning range	530-1,620 kHz
Antenna terminal	FM/AM external antenna connector
Intermediate frequency	450 kHz
Selectivity	28 μV
Signal-to-noise ratio	55 dB
Harmonic distortion	0.3%

General

Power requirements	12 V dc car battery (negative ground)
Current drain	800 mA (CD playback) 800 mA (during disc loading or eject) 300 mA (radio reception)
Operating temperature	-10°C-55°C (14°F-131°F)
Mounting dimensions	Changer Approx. 321 × 131 × 220 mm (w/h/d) ($12\frac{3}{4} \times 5\frac{1}{4} \times 8\frac{3}{4}$ in.) incl. projecting parts and controls Commander Approx. 178 × 48 × 25 mm (w/h/d) ($7\frac{1}{8} \times 1\frac{15}{16} \times 1$ in.) including projecting parts and controls
Weight	Changer Approx. 5.6 kg (12 lb 6 oz) Commander Approx. 0.3 kg (11 oz)

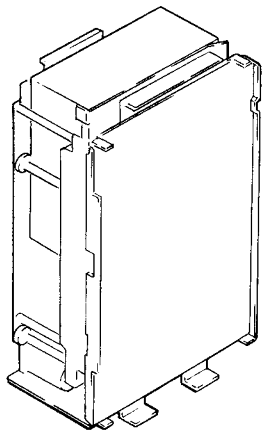
FEATURES

The CDX-A10/J10 compact disc player automatically changes the discs in the disc magazine, and enables you to play the desired selection of the 10 discs in the desired sequence.

- The changer in the trunk room can be operated with the remote commander installed in the car.
- You can listen to the radio by connecting the tuner unit (optional).
- A compact remote commander for easy mounting.
- The "feather-touch" function keys enable you to switch directly from one mode to another.
- Search function for locating a desired disc and a desired point in the disc.
- AMS (Automatic Music Sensor) function for playing particular selections in any desired order.
- The PGM (program) function for choosing the selection with the numbered buttons, or for playing particular selections in any desired order.
- The SE (Sound Effector) key allows you to obtain the acoustical effects.

SERVICING NOTES

- This set uses sensors to check the various states, and room lighting, etc. may cause misoperation.
- Position the set as shown below when performing main board voltage measurement and waveform check, etc.



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– CAUTION FOR ELECTROSTATIC BREAKDOWN –

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK (KSS-110E)

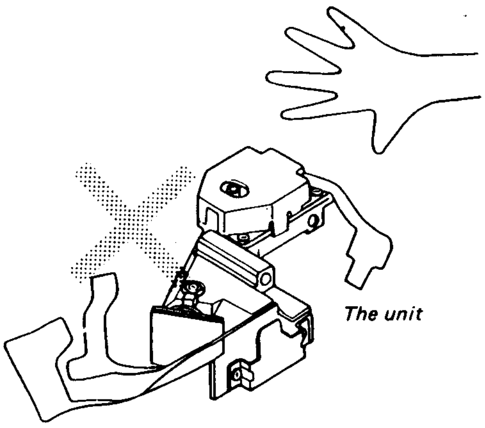
The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.
The printed matter below is included in the repair parts. During repair, use the procedure in the printed matter.
The flexible board is easily damaged and should be handled with care.
The following method is an example for reference purposes:

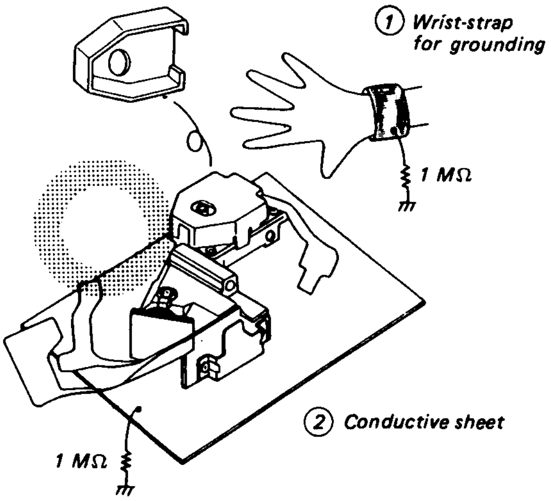
1. Place a conductive sheet on the workbench. (The black sheet used as repair parts wrapping).
2. Place the set on the conductive sheet so that the chassis touches the sheet. (This makes it the same potential as the conductive sheet).
3. Place your hands on the conductive sheet. (This makes them the same potential as the sheet).
4. Remove the optical pick-up block.
5. Perform work on top of the conductive sheet. Be careful that clothing does not touch the optical pick-up block.

Printed Matter Included in the Repair Parts

When opening or repairing the unit, the procedure for grounding as follows is required to prevent damage caused by static electricity.

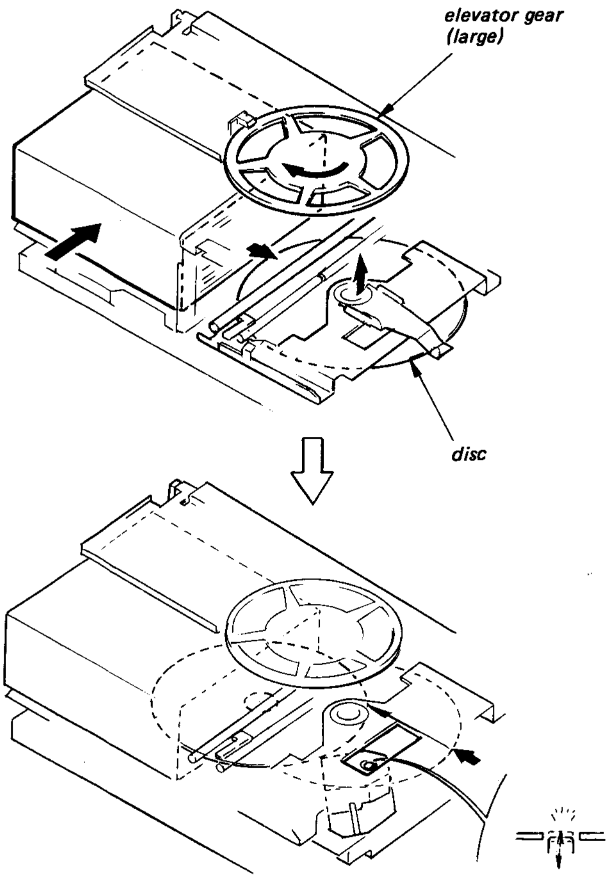
1. Grounding for the human body
   Be sure to put on a wrist-strap for grounding (with impedance lower than $10^8\ \Omega$) whose other end is grounded. The strap works to drain away the static electricity build-up on the human body.
2. Grounding for the work table
   Be sure to lay on the table a conductive sheet (with impedance lower than $10^9\ \Omega$) such as sheet of copper, which is grounded.
3. As static electricity build-up on clothes is not drainded away, be careful not to let your clothes touch the unit.
4. Handling the flexible board
   The flexible board is easily damaged and should be handled with care.





LASER CHECK

1. Remove case and cover.
2. Insert a disc into first slot of pack.
3. Load the disc when pushing PLAY button of commander.
4. Push ALL OFF button.
5. Rotate elevator gear (large) by hand so that disc is set near first slot.
6. Push the disc by hand so that the disc returns a half to the pack.
7. Check that laser lights up by pushing PLAY button in this condition.
   In this time, optical pick-up block moves up and down 6 times. Be sure to push ALL OFF button within 6 times, or disc will be damaged.
8. Push RESET button.



TROUBLESHOOTING FLOW CHART

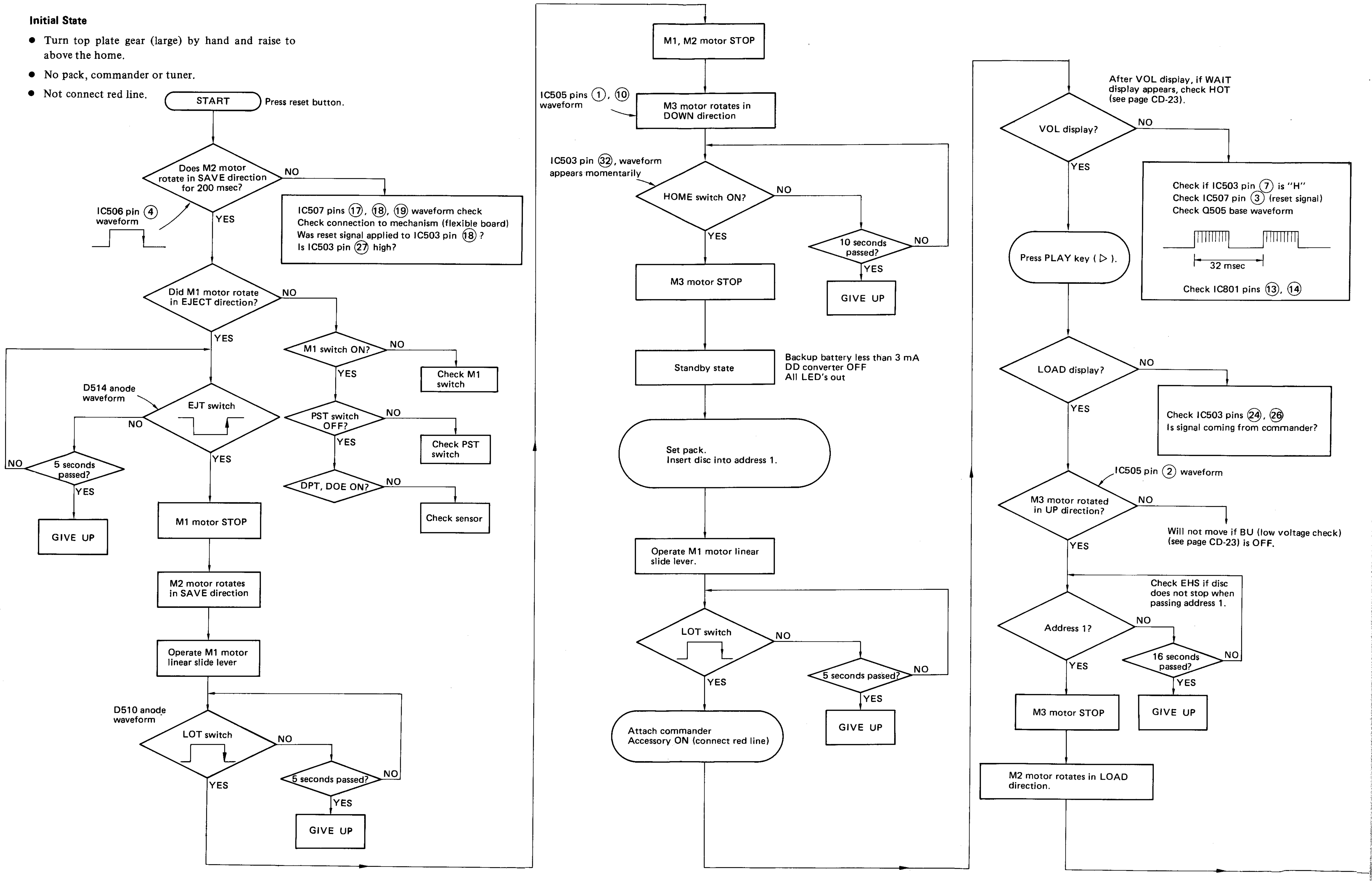
Troubleshooting can be done on this set by performing the following operations.

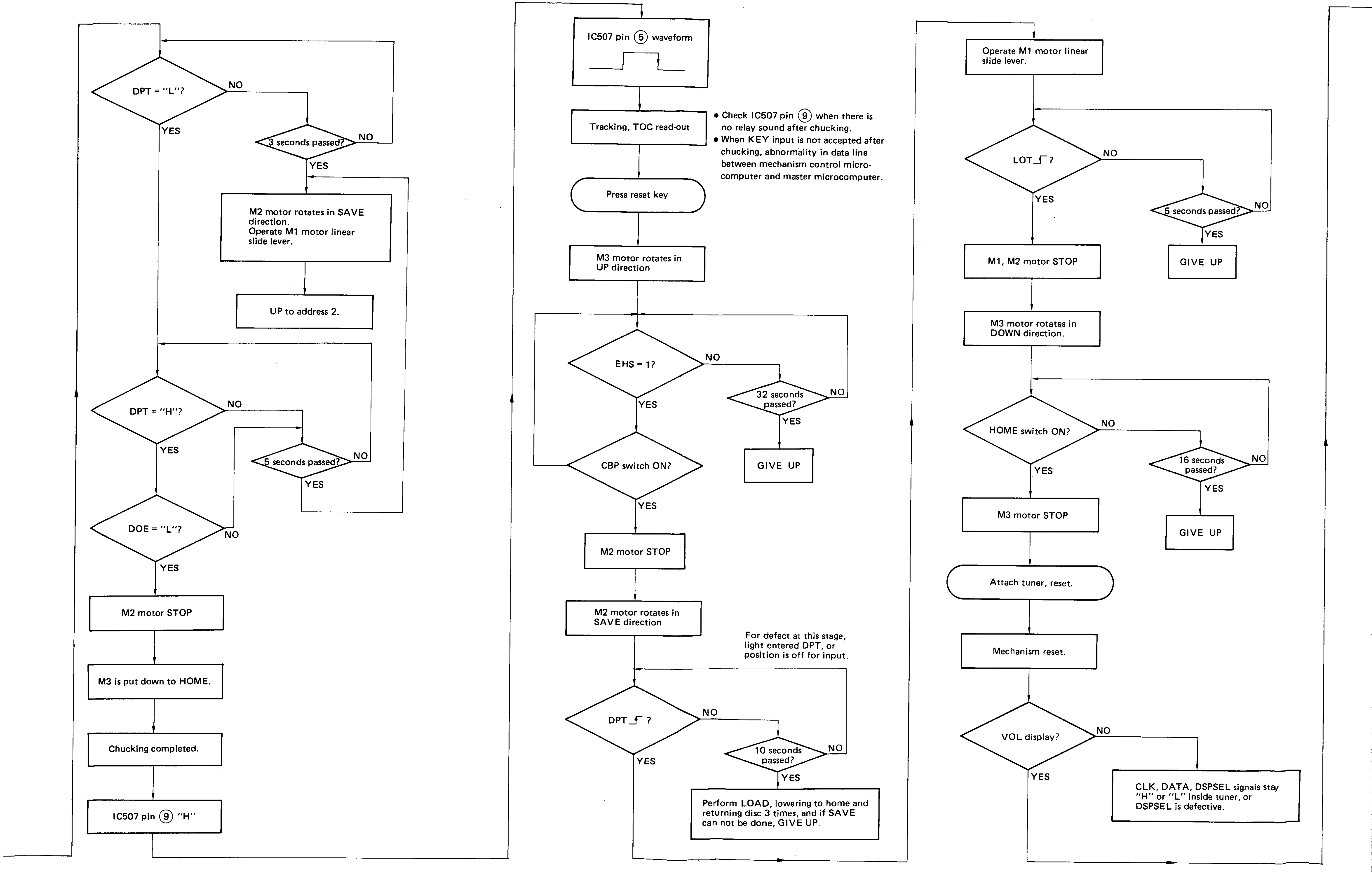
1. Remove the case and take out the body of the set. (Leave DD converter connection in place.)
2. Turn top plate gear (large) by hand so that it is higher than the home.
3. Apply 14.4 V from the regulated power supply to the yellow and black lines.
   (If S902 (M1 switch) is off, there will be no operation, so turn R ger (F) so that S902 goes on.)
4. Turn power on.
5. After linear slide lever operation is completed, the elevator will return to home. If it does not, there is a failure somewhere.
   When bringing the elevator above the home again and operating, press the reset button after turning power on.
6. Next insert the pack and check operation.
7. Next attach the commander and apply +14.4 V to the yellow and red lines. (Red is accessory line.)
8. Press the ▷ key and check each operation.
9. Press the reset button and check each operation.
10. Attach the tuner and press the reset button.
11. Turn the tuner on and check operation.

The following indicates the flow chart for the above.

Initial State

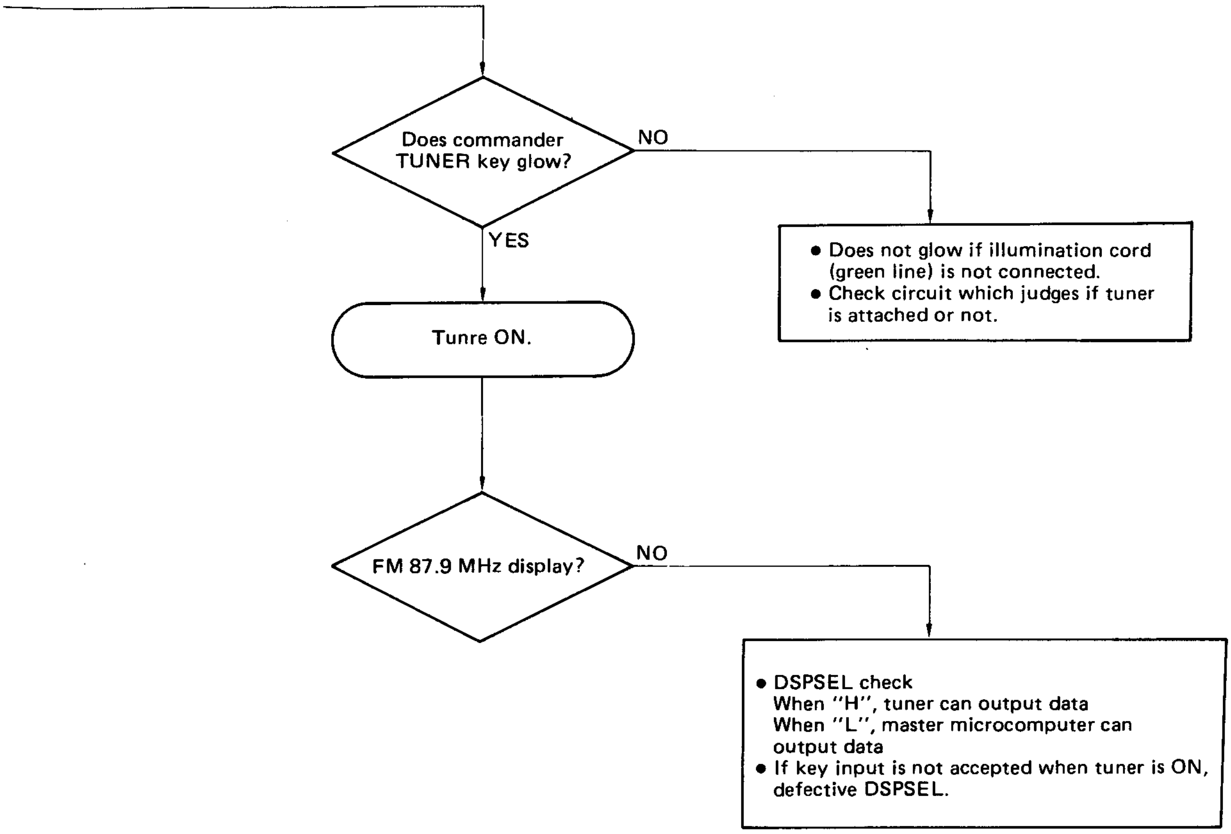
- Turn top plate gear (large) by hand and raise to above the home.
- No pack, commander or tuner.
- Not connect red line.


START
Press reset button.
Does M2 motor rotate in SAVE direction for 200 msec?
NO
IC507 pins ⑰, ⑱, ⑲ waveform check
Check connection to mechanism (flexible board)
Was reset signal applied to IC503 pin ⑱ ?
Is IC503 pin ㉗ high?
IC506 pin ④ waveform
YES
Did M1 motor rotate in EJECT direction?
NO
YES
M1 switch ON?
NO
Check M1 switch
YES
PST switch OFF?
NO
Check PST switch
YES
DPT, DOE ON?
NO
Check sensor
D514 anode waveform
EJT switch
NO
5 seconds passed?
NO
YES
GIVE UP
YES
M1 motor STOP
M2 motor rotates in SAVE direction
Operate M1 motor linear slide lever
D510 anode waveform
LOT switch
NO
5 seconds passed?
NO
YES
GIVE UP
YES
M1, M2 motor STOP
IC505 pins ①, ⑩ waveform
M3 motor rotates in DOWN direction
IC503 pin ㉜, waveform appears momentarily
HOME switch ON?
NO
10 seconds passed?
NO
YES
GIVE UP
YES
M3 motor STOP
Standby state
Backup battery less than 3 mA
DD converter OFF
All LED's out
Set pack.
Insert disc into address 1.
Operate M1 motor linear slide lever.
LOT switch
NO
5 seconds passed?
NO
YES
GIVE UP
YES
Attach commander
Accessory ON (connect red line)
After VOL display, if WAIT display appears, check HOT (see page CD-23).
VOL display?
NO
Check if IC503 pin ⑦ is "H"
Check IC507 pin ③ (reset signal)
Check Q505 base waveform
32 msec
Check IC801 pins ⑬, ⑭
YES
Press PLAY key (▷).
LOAD display?
NO
Check IC503 pins ㉔, ㉖
Is signal coming from commander?
YES
IC505 pin ② waveform
M3 motor rotated in UP direction?
NO
Will not move if BU (low voltage check) (see page CD-23) is OFF.
YES
Check EHS if disc does not stop when passing address 1.
Address 1?
NO
16 seconds passed?
NO
YES
GIVE UP
YES
M3 motor STOP
M2 motor rotates in LOAD direction.


DPT = "L"?
NO
YES
3 seconds passed?
NO
YES
M2 motor rotates in SAVE direction.
Operate M1 motor linear slide lever.
UP to address 2.
DPT = "H"?
NO
YES
5 seconds passed?
NO
YES
DOE = "L"?
NO
YES
M2 motor STOP
M3 is put down to HOME.
Chucking completed.
IC507 pin ⑨ "H"
IC507 pin ⑤ waveform
Tracking, TOC read-out
Press reset key
M3 motor rotates in UP direction
EHS = 1?
NO
YES
32 seconds passed?
NO
YES
GIVE UP
CBP switch ON?
YES
M2 motor STOP
M2 motor rotates in SAVE direction
DPT _Г ?
NO
YES
10 seconds passed?
NO
YES
Perform LOAD, lowering to home and returning disc 3 times, and if SAVE can not be done, GIVE UP.
Operate M1 motor linear slide lever.
LOT _Г ?
NO
YES
5 seconds passed?
NO
YES
GIVE UP
M1, M2 motor STOP
M3 motor rotates in DOWN direction.
HOME switch ON?
NO
YES
16 seconds passed?
NO
YES
GIVE UP
M3 motor STOP
Attach tuner, reset.
Mechanism reset.
VOL display?
NO
YES
CLK, DATA, DSPSEL signals stay "H" or "L" inside tuner, or DSPSEL is defective.

- Check IC507 pin ⑨ when there is no relay sound after chucking.
- When KEY input is not accepted after chucking, abnormality in data line between mechanism control micro-computer and master microcomputer.

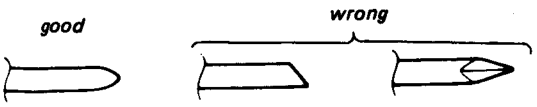
For defect at this stage, light entered DPT, or position is off for input.

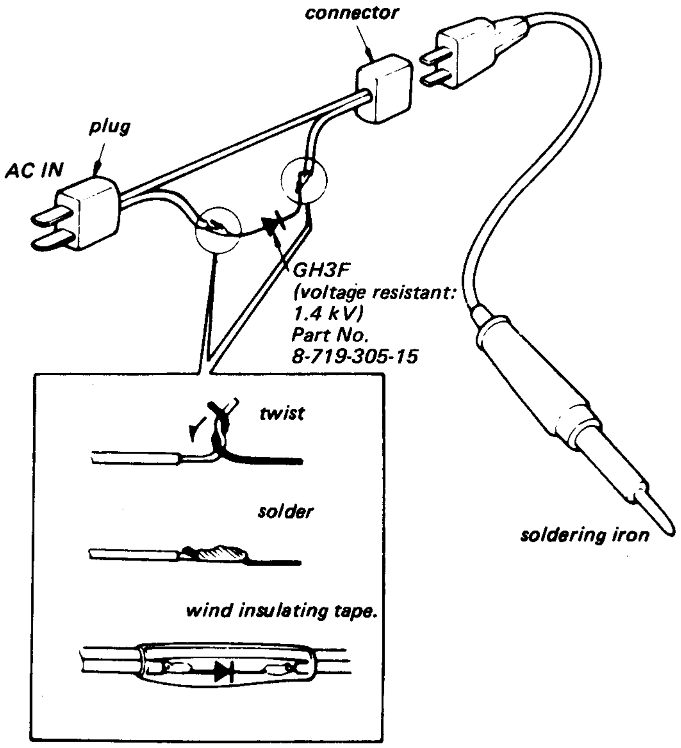

Does commander TUNER key glow?
NO
• Does not glow if illumination cord (green line) is not connected.
• Check circuit which judges if tuner is attached or not.
YES
Tunre ON.
FM 87.9 MHz display?
NO
• DSPSEL check
When "H", tuner can output data
When "L", master microcomputer can output data
• If key input is not accepted when tuner is ON, defective DSPSEL.

FLEXIBLE CIRCUIT BOARD REPAIRING

1. Keep the temperature of the soldering iron at 270° ± 10°C during repairing.
   You can maintain the temperature of the soldering iron around 270°C by using the thermal controller as illustrated on the right.
2. Do not touch the soldering iron more than 4 seconds or 3 times on the same conductor of the circuit board.
3. Do not apply force on the conductor when soldering or unsoldering.

Tip of soldering iron




connector
plug
AC IN
GH3F
(voltage resistant: 1.4 kV)
Part No.
8-719-305-15
twist
solder
wind insulating tape.
soldering iron

REPLACING CHIP COMPONENTS

All chip components should be connected and disconnected, using a tapered soldering iron [temperature of the iron tip: less than 280°C (536°F)], a pair of tweezers and braided wire.

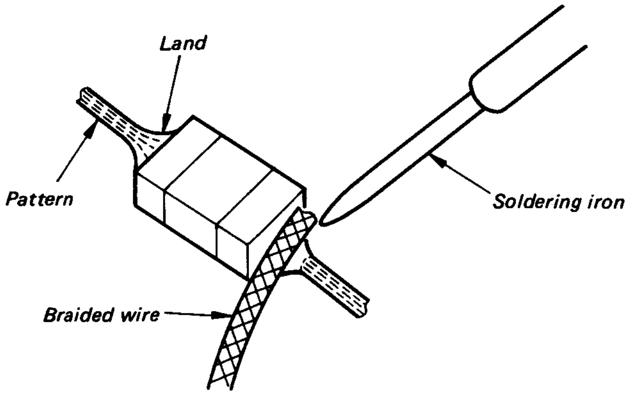
Precautions for replacement

1. **Do not disconnect the chip component forcefully. Otherwise, the pattern may peel off.**
2. **Never re-use a disconnected chip component. Dispose of all old chip components.**
3. **To protect the chip component, heating time for attaching the component should be within 3 seconds.**

○ Removing chip components

(1) Removing solder at electrode

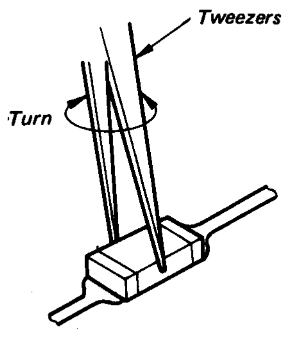
Remove the solder at the electrode, using a thin braided wire. Do not remove the solder of the part (chip component) attached adjacent to the electrode.



(2) Disconnecting chip components

Turn the tweezers with the soldering iron alternately applied to both electrodes, and the chip component will be disconnected. Take careful precautions while disconnecting, because if the chip component is forcefully removed the land may peel off.

Never re-use a disconnected chip component.



(3) Smoothing the soldered surface

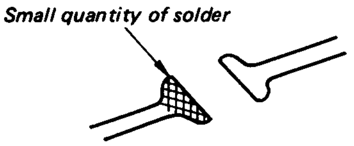
After disconnecting the chip component, remove the solder by using a braided wire to smooth the land surface.

○ Connecting chip components

The value of chip components is not displayed on the main body. Take due precautions to avoid mixing new chip components with other ones.

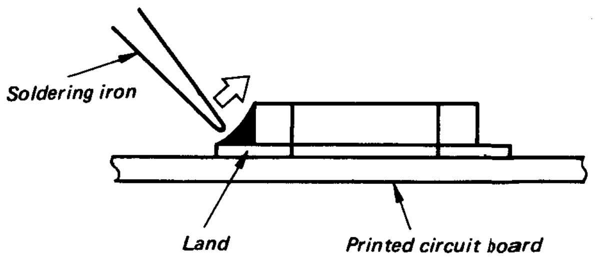
(1) Applying solder to land on one side

Apply a thin layer of solder to the land on one side where the chip component is to be connected. Too much solder may cause bridging.



(2) Speedy soldering

Hold the chip component at the desired position, using tweezers, and apply the soldering iron in the arrow-marked direction. To protect the chip component, heating time should be within 3 seconds.



(3) Speedy soldering of electrode on the other side

Solder the electrode on the other side in the same way as in (2) above.

MELF (Metal Electrodes Face-Bonding) Components

Warning

If MELF components are forcibly removed from the printed circuit board with pincers or pliers, the circuit board pattern is likely to peel away. Always remove MELF components according to the procedure described on the next page.

MELF components are soldered directly to the surface of the printed circuit board.

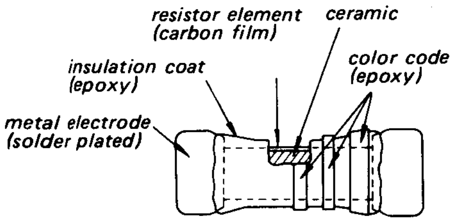
MELF resistors and capacitors have the same dimensions and are distinguished by their background colors: light brown for resistors, and pink or light green for capacitors.

The MELF resistor color coding is the same as for conventional resistors, and MELF capacitor color coding is the same as for tube-type ceramic capacitors.

Components larger than resistors and without a color code are cross conductors, which are used instead of jumper wires.

1. Structure

(Resistors)


resistor element
(carbon film)
ceramic
insulation coat
(epoxy)
color code
(epoxy)
metal electrode
(solder plated)

(Capacitors)

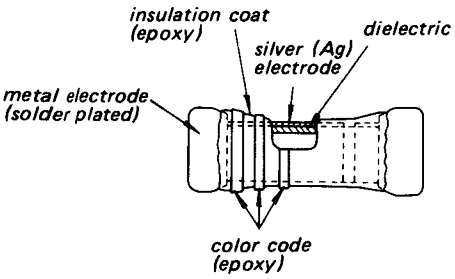
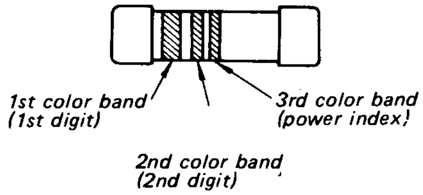
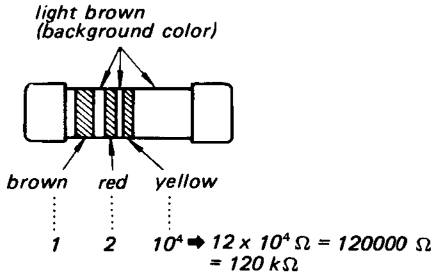

insulation coat
(epoxy)
dielectric
silver (Ag)
electrode
metal electrode
(solder plated)
color code
(epoxy)

Fig. 1

2. Color Code Reading


1st color band
(1st digit)
3rd color band
(power index)
2nd color band
(2nd digit)

(Example of Resistor)


light brown
(background color)
brown
red
yellow
1
2
10⁴ ➡ 12 x 10⁴ Ω = 120000 Ω
= 120 kΩ

(Example of Capacitor)

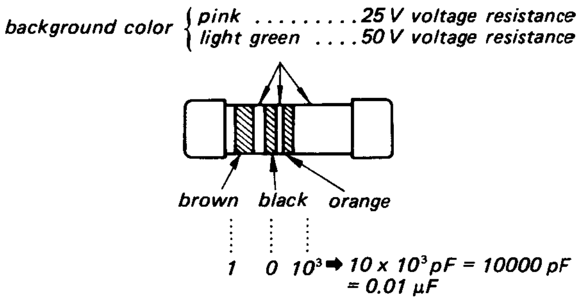

background color
pink ....25 V voltage resistance
light green ....50 V voltage resistance
brown
black
orange
1
0
10³ ➡ 10 x 10³pF = 10000 pF
= 0.01 μF

Fig. 2

3. How to Remove MELF Components and Mount Replacements

Use a soldering iron of at least 40W with an iron tip 4mm in diameter and file the tip down to the angle shown in the diagram.

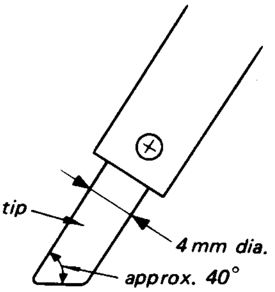

iron tip
4mm dia.
approx. 40°

Fig. 3

1. Bring the flat surface of the soldering iron in equal contact with both soldered ends of the component.
2. The solder should melt in about 4 seconds. (The solder will melt more readily if a small amount of solder is attached to the iron tip and the iron tip is placed against the component.)
3. Once the solder has melted, tap the component aside with the tip of the soldering iron, and remove it from the board.

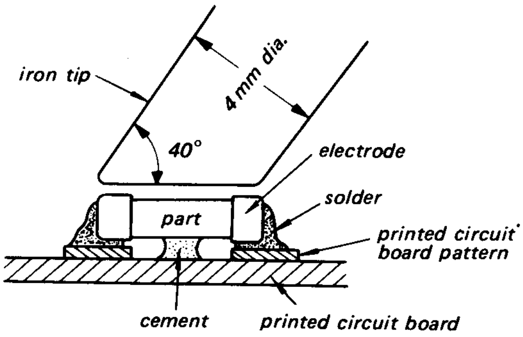

iron tip
4mm dia.
40°
electrode
solder
part
printed circuit board pattern
cement
printed circuit board

Fig. 4

4. Use lead type resistors or 3216 type chip capacitors to replace the MELF components. These replacements may be mounted with short leads (see Fig. 5).

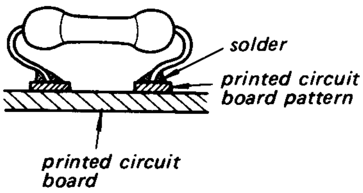

solder
printed circuit board pattern
printed circuit board

Fig. 5

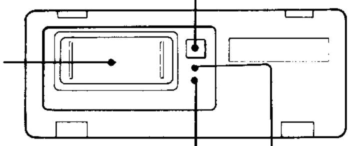
LOCATION AND FUNCTION OF CONTROLS

For detailed operation, refer to the page of the number in ●.

CHANGER (In the trunk room)

⏏ EJECT button
Press this button to remove the disc magazine.

Magazine slot



RESET button
Press this button with a pencil or similar object after all leads have been connected, if any key or control does not function, if the E-99 indicator flickers, or after the tuner unit has been connected to the unit or disconnected from the unit.
If this button is pressed, all memory is erased.

STANDBY indicator
When the disc magazine is inserted into the changer, this indicator lights up for a few seconds.

REMOTE COMMANDER

General

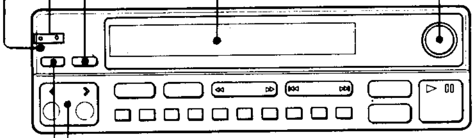
SURROUND indicator

ALL OFF key
Press this key to turn the power off.

DRS (Dynamic Range Suppressor) indicators

SELECT key
Press this key to select the sound control mode—volume, bass, treble, balance or fader.

Display window

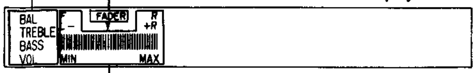


Sound control key
Normally this key operates as a volume control.
Press it to adjust the sound level or quality selected with the SELECT key.

SE (Sound Effector) key
Press this key to select sound effect—SURROUND, DRS 1 or DRS 2.

Sound control indicator
Normally the VOL indicator is displayed.
When the desired mode is selected with the SELECT key, the indicator of that mode appears, and the VOL indicator dissappears. The BAL (balance), TREBLE, BASS, and FADER indicator will dissappear a few seconds after the adjustment is completed and the VOL indicator will appear again.

Display window



Level scale
Normally this level scale shows the overall sound level. By switching the SELECT key, it also shows the level of treble response, bass response, the balance of left and right channels, or of front and rear speakers.

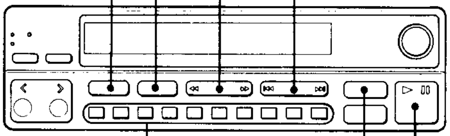
For CD play

◀◀ ▶▶ key
Press this key to quickly locate a desired point of a selection in forward or backward direction during play or pause.

RMS (Random Music Sensor) key
Use this key for programming RMS play.

MEM (memory) key
Use this key for presetting memory program play.

|◀◀ ▶▶| key
Press this key after pressing the numbered buttons to select the desired selection during play or pause.
Press this key to quickly locate a desired selection in forward or backward direction during play or pause.



Numbered buttons
Use these buttons to select the desired disc or selection, or for RMS play or memory program play.

PGM PLAY (Program Play) key
Press this key to start the memory program play. To release the program play, press it again.

▶II/DISC key
Press this key to start normal disc play. The ▶ indicator will light up.
Press it to pause during play. The II indicator will light up. To release the pause mode, press this key again.
Press it after pressing the numbered buttons to select the desired disc, during play or pause.

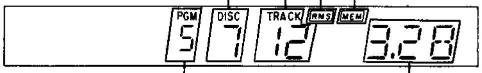
MEM indicator
This indicator appears when the MEM key is pressed. When the selection is preset on the numbered button, this indicator disappears.

RMS indicator
This indicator flickers when the RMS key is pressed, and is displayed during RMS play.

TRACK indicator
This indicator shows the number of the selection being played.

DISC indicator
This indicator shows the number of the disc being played.

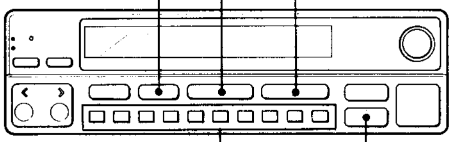
Display window



PGM indicator
The PGM indicator appears when the PGM PLAY key is pressed.
This indicator shows the number of the numbered button that the selection being played is preset on.

Time counter
This time counter shows the elapsed time in minutes and seconds.

For radio reception – When the XT-10 tuner unit (optional) is connected



SENS key
Press this key during radio reception to select the desired mode, LCL (local), ST (FM stereo) or MONO (monaural).

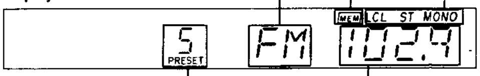
–MANU+ (manual) key
Press this key for manual tuning.

–SCAN+ key
Press for automatic scanning.

Numbered buttons
Press the desired number button to preset the frequency and to receive a preset station.

TUNER/BAND key
Press this key to turn on the radio.
During radio reception, press this key to select the desired band, FM or AM.

Display window



LCL/ST/MONO (local/FM stereo/monaural) indicator ⑬

MEM indicator
This indicator appears for about 5 seconds when the MEM key is pressed.

BAND indicator
This indicator shows the selected band, FM or AM.

Frequency indicator
This indicator shows the frequency being received.

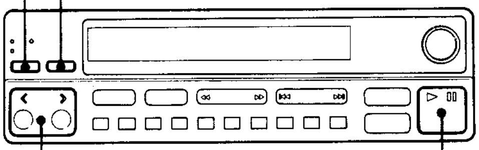
PRESET indicator
When a station is preset, the PRESET indicator and the number of the pressed numbered button appears.

OPERATIONS

TO START DISC PLAY

SE (sound effector) key

SELECT key

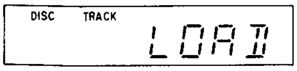


Sound control key

Press the ▶II/DISC key.
The ▶ indicator lights up. Disc play will start.

When the disc reaches the end of the last selection of the disc, play of the next disc starts automatically.
While the disc is being changed, the LOAD indicator is displayed.

Display window



When the play of the last selection of the last disc ends, the unit will automatically go back to the beginning of the first selection of the first disc, and play will restart.

Notes
- When the ▶II/DISC key is pressed the first time after the disc magazine has been inserted into the changer, play starts from the beginning of the first selection on the first disc.
- When the ▶II/DISC key is pressed in the pause mode or stop mode, play starts from the point at which the disc play was stopped.
- If the ignition key is turned OFF during play, and set to IGN or the accessory position after more than 32 seconds, play will resume from the beginning of the same selection as before. If you were listening to the RMS play or memory program play, that play will be canceled.

DISC PLAYING

TO STOP DURING PLAY

To pause during play for a moment
Press the ▶II/DISC key. The II indicator lights up.
To release the pause mode, press the key again. Disc play restarts from the same point.

To stop the disc play
Press the ALL OFF key. To restart the disc play, press the ▶II/DISC key. Disc play will start from the same point.

The disc play also stops when the TUNER/BAND key is pressed when the XT-10 tuner unit is connected to the unit. (The radio is turned on.) To restart disc play, press the ▶II/DISC key. Play will start from the point at which the TUNER/BAND key was pressed.

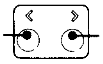
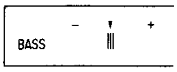
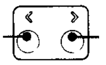
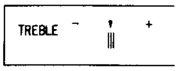
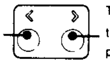
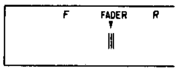
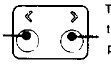
DISC PLAYING

TO ADJUST THE SOUND LEVEL QUALITY

1 Press the SELECT key to select the desired sound quality—volume, bass, treble, balance or fader. The word indicating the selected mode is displayed in the display window.

2 While the word indicating the selected mode is displayed, adjust the sound with the sound control key.

The sound control key will take the function of a volume control a few seconds after the adjustment is completed.

Display	Sound control key
Volume control	**Adjust the volume.** To decrease, keep this side pressed or press repeatedly.  To increase, keep this side pressed or press repeatedly.
Bass control 	**Adjust the bass response or the treble response.** To decrease, keep this side pressed or press repeatedly.  To increase, keep this side pressed or press repeatedly.
Treble control 	
Balance control	**Adjust the balance of the right and left channels.** To increase the level of the left speakers, keep pressed or press repeatedly.  To increase the level of the right speakers, keep pressed or press repeatedly.
Fader control 	**Adjust the balance of the front and rear speakers.** To increase the level of the front speakers, keep pressed or press repeatedly.  To increase the level of the rear speakers, keep pressed or press repeatedly.

SE (sound effector) key
Optimum sound effect can be obtained by using this key.

SURROUND	When you want to obtain natural and rich reproduced sounds, almost like being in a concert hall, press the SE key once. The SURROUND indicator lights up. The level of the rear speaker system will be increased.
DRS* 1	If engine noise or outside noise is annoying, press the SE key twice. The DRS 1 indicator lights up. Low level sound will be increased.
DRS 2	When you want to obtain a stronger effect than that of DRS 1, press the SE key three times. The DRS 2 indicator lights up. Low level sound will be further increased. To release the DRS 2 mode, press the key again.

*DRS (Dynamic Range Suppressor) compensates low level sound and suppresses very high level sound.

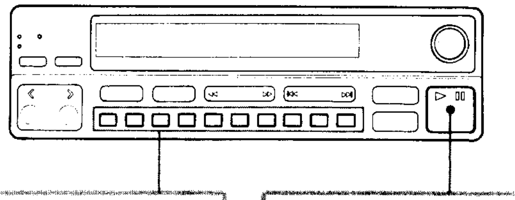
Sound skip
When you are driving on a very rough road, the sound is occasionally skipped. This is inevitable and will not cause machine trouble, disc scratches, etc. When you return to good road conditions, you will enjoy superb sound.

An important point to remember
In the CD system, a wider dynamic range is achieved than that of the conventional analog system, and the peaks or high level inputs are recorded with high-fidelity. In addition, the noise level is very low.
If you turn up the volume inadvertently while listening to a portion where no audio signals of very low level inputs are recorded, the speakers may be damaged when the portion with peak levels is played.

DISC PLAYING

SEARCH OPERATION

TO SEARCH FOR A PARTICULAR DISC

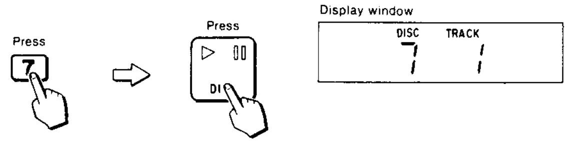


1 **Press the numbered button corresponding to the disc which you want to play.**
During the radio reception, press the numbered button after pressing the ALL OFF key or ►II/DISC key.

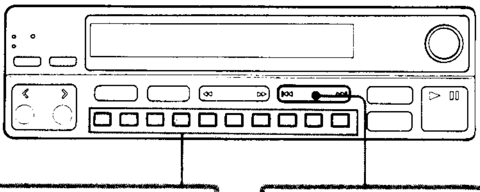
2 **Press the ►II/DISC key within about 5 seconds after pressing the numbered button.**
Play will start from the beginning of the desired disc.

The numbers of numbered buttons match the numbers on the side of the disc magazine.

Example: To listen to the 7th disc



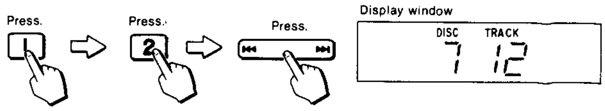
TO SEARCH FOR A PARTICULAR SELECTION DURING PLAY OR PAUSE
—AMS (Automatic Music Sensor) function—



1 **Press the numbered button corresponding to the selection which you want to play.**

2 **Press the ⏮ ⏭ key within about 5 seconds after pressing the numbered button.**
Play will start from the beginning of the desired selection.

Example: To listen to the 12th selection (on the 7th disc)

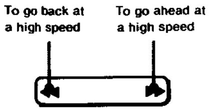


To search for a previous selection during play or pause
Press the ⏮ side of the ⏮ ⏭ key once. The beginning of the selection being played is searched for. Each time the ⏮ side is pressed, one selection back is searched for. When the ⏮ side is kept pressed, a previous selection is searched for continuously.

To search for a selection ahead during play or pause
Press the ⏭ side of the ⏮ ⏭ key once. The next selection after that being played is search for. Each time the ⏭ side is pressed, the selection ahead is searched for. When the ⏭ side is kept pressed, a selection ahead is searched for continuously.

Note
When the disc reaches the beginning of the last or first selection, the scanning stops at that point.

TO SEARCH FOR A PARTICULAR POINT IN A SELECTION DURING PLAY OR PAUSE
—Manual search—



When you have passed the end of the disc by keeping the ▶▶ side pressed or passed the beginning of the disc by keeping the ◀◀ side pressed, the manual search stops at that point.

DISC PLAYING

RMS (Random Music Sensor) PLAY

You can select up to 5 selections on the discs in the disc magazine and play them in whatever sequence you wish.

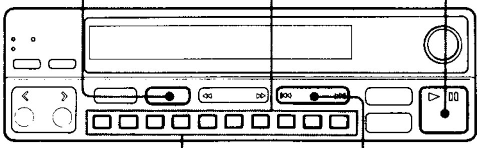
TO PROGRAM FOR RMS PLAY

The selection can be programmed either during play or pause.

1 **Press the RMS key.**
The RMS indicator, disc number, and track number in the display window flicker, and the time counter disappears.

2 **While the RMS indicator is flickering, press the numbered button corresponding to the disc which you want to play.**

3 **Press ▶II/DISC key within about 5 seconds after pressing the numbered button.**
The desired disc number will stop flickering.



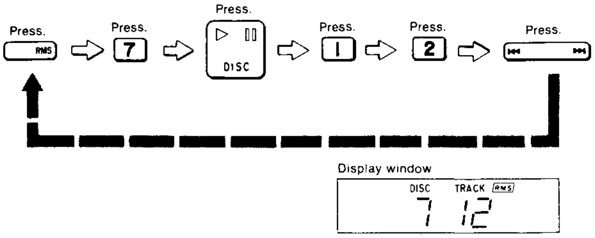
4 **While the track number is flickering, press the numbered button corresponding to the selection which you want to play.**

5 **Press the ⏮ ⏭ key within about 5 seconds after pressing the numbered button.**
The desired selection number and the RMS indicator will stop flickering.

6 **Repeat steps 3–5.**
Up to 5 selections can be programmed until the "FULL" appears in the display window.

Play is not interrupted, even while the selections is programmed.
When the disc reaches the end of the selection being played, the RMS play will start. (When the unit is in pause, press the ▶II/DISC key.)
The selections are played in the order in which they are programmed.

Example: To program the 12th selection on the 7th disc for RMS play



To stop RMS play
Press the ALL OFF key. The memory of the remaining RMS play will be canceled.
The RMS play also stops and is canceled when the TUNER/BAND key is pressed with the XT-10 tuner unit connected to the unit. (The radio is turned on.)

To search for a selection in forward direction of the sequence programmed during RMS play, press the ⏭ key.

- When the ⏮ side of the ⏮ ⏭ key is pressed during RMS play, the beginning of the selection being played is searched for.
- When the ◀◀ or ▶▶ side of the ◀◀ ▶▶ key is pressed during RMS play, play will go back or ahead in the normal sequence, and resume from the reached point. When playing of that selection ends, RMS play will resume from the beginning of the next programmed selection.

Notes
- RMS play will be canceled when:
  - —the desired disc is selected with ▶II/DISC key and numbered button.
  - —the desired selection is selected with ⏮ ⏭ key and numbered button.
  - —more than 32 seconds passes after the ignition key is turned OFF.
- When the play of the last-programmed selection ends, play will start in normal sequence from the beginning of the next selection.
- The RMS indicator shows that the selections programmed for RMS play are memorized.

DISC PLAYING

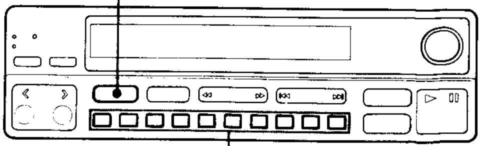
MEMORY PRESET TUNING

Up to 10 selections can be preset on each numbered button in the desired sequence.
Also, you can play the preset selections continuously in the desired sequence.

TO PRESET THE SELECTION BEING PLAYED

The selection can be preset in the unit's memory either during play or pause.

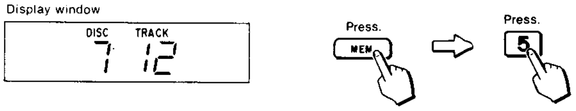
1 **Press the MEM key.**



2 **While the MEM indicator is displayed, press the desired numbered button.**
The MEM indicator disappears and the selection being played is preset on that numbered button.

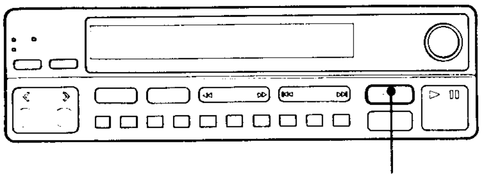
Example: To preset the 12th selection on the 7th disc on the numbered button 5

While the disc number 7 and the track number 12 are displayed.



TO START MEMORY PROGRAM PLAY

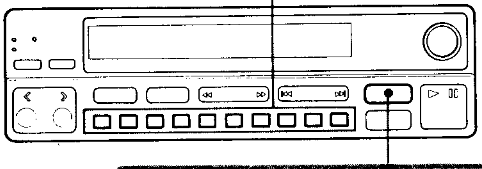
To start play from the selection preset on the numbered button 1



Press the PGM PLAY key.
The PGM indicator and the number "1" appears.
The preset selections are played repeatedly in the order of the number of the numbered buttons.

To start play from the selection preset on the desired numbered button.

1 Press the desired numbered button.
During the radio reception, press the numbered button after pressing the ALL OFF key or ►II/DISC key.



2 Press the PGM PLAY key within about 5 seconds after pressing the numbered button.
The PGM indicator and the number of the numbered button pressed appears. Play will start from the beginning of the selection preset on the numbered button pressed.

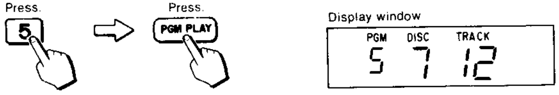
This operation is possible even when the preset selection is being played.

Notes

- The previous memory will be erased when a new selection is preset on the previously numbered button.
- If the RESET button is pressed, all memory is erased.
- During memory program play, the numbered buttons on which no selections were preset are skipped.
- If no disc is in the slot which matches the number of the disc preset on the numbered button, the memory of that numbered button will be erased.

Example: To listen to the selection preset on the 5 numbered button

When that selection is the 12th selection on the 7th disc, the display window will be as illustrated below.



To stop the memory program play
Press the PGM PLAY key again. When the selection being played ends, play will start in normal sequence from the beginning of the next selection.

To search for a selection in forward direction of the sequence programmed during memory program play, press the ►►I key.

- When the I◄◄ side of the I◄◄ ►►I key is pressed during memory program play, the beginning of the selection being played is searched for.
- When the ◄◄ side or ►► side of the ◄◄ ►► key is pressed during memory program play, play will go back or ahead in the normal sequence, and resume from the reached point. When playing of that selection ends, memory program play will begin again from the beginning of the next preset selection.

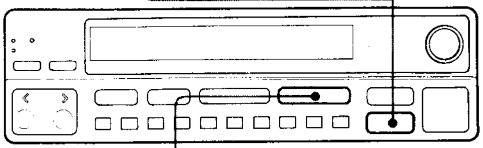
RADIO RECEPTION

When the XT-10 tuner unit is connected to the unit, you can listen to the radio.

AUTOMATIC TUNING

1 Press the TUNER/BAND key.
The tuner is turned on.

2 Select the desired band, FM or AM, by pressing the TUNER/BAND key.
The corresponding indicator will appear.



3 Press the SCAN key. When a station is tuned in, scanning stops for a few seconds. When you want to listen to that station, press the key again.

To turn off the radio, press the **ALL OFF** key, the **►II/DISC** key or the **PGM PLAY** key.
When the **►II/DISC** key is pressed, CD play starts.
When the **PGM PLAY** key is pressed, PGM PLAY starts.

To adjust the sound level and quality, use the **SELECT** key and the sound control key. (See page 16.)

SENS key
Press this key to select the mode you require —LCL (local) or MONO (monaural).
Select the LCL mode to receive AM station at night or to receive a strong FM/AM signal station.
Select the MONO mode if noise makes it hard to hear an FM program.
When the FM stereo is received, the ST indicator appears.

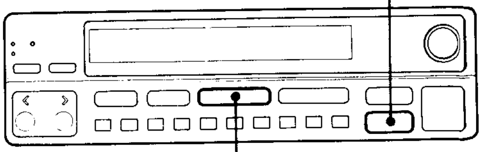
SENS key	Mode	
	While receiving FM stations	While receiving AM stations
Press once.	**LCL mode** The LCL indicator appears.	**LCL mode** The LCL indicator appears.
Press twice.	**MONO mode** The MONO indicator appears. If the FM stereo program has been received, the ST indicator goes out.	(released)
Press three times.	(released)	

RADIO RECEPTION

MANUAL TUNING

1 Press the TUNER/BAND key.
The tuner is turned on.

2 Select the desired band, FM or AM.



3 Observing the frequency digits in the display window, press the + side of the MANU key to go to a higher frequency, or the − side to go to a lower frequency.

When you press the + side or − side of the MANU key once, the frequency will be increased or decreased by following intervals:
FM: 0.2 MHz
AM: 10 kHz

To change the frequency continuously, keep the key pressed.

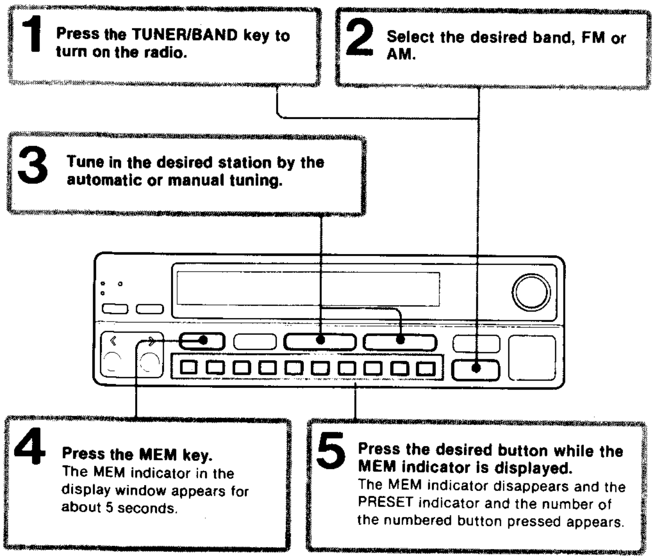
Warning
While driving, keep your eyes on the road and use the automatic tuning or the memory preset tuning!

RADIO RECEPTION

MEMORY PROGRAM PLAY

TO PRESET A STATION

You can preset an FM and an AM station on each numbered button.



1 **Press the TUNER/BAND key to turn on the radio.**

2 **Select the desired band, FM or AM.**

3 **Tune in the desired station by the automatic or manual tuning.**

4 **Press the MEM key.**
The MEM indicator in the display window appears for about 5 seconds.

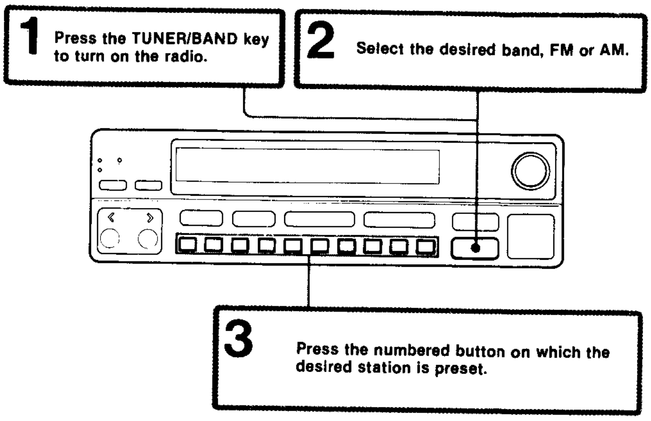
5 **Press the desired button while the MEM indicator is displayed.**
The MEM indicator disappears and the PRESET indicator and the number of the numbered button pressed appears.

The MEM indicator disappears after about 5 seconds. When the MEM indicator disappears, memory circuit does not function. In this case, press the MEM key again.

Notes

- The previous memory will be erased when a new frequency is put in the memory of a previously used button.
- If the PRESET button is pressed, all memory is erased.

TO RECEIVE A PRESET STATION.



1 **Press the TUNER/BAND key to turn on the radio.**

2 **Select the desired band, FM or AM.**

3 **Press the numbered button on which the desired station is preset.**

INSTALLATION AND CONNECTIONS

INSTALLATION

INSTALLATION OF THE CD PLAYER

Before installation

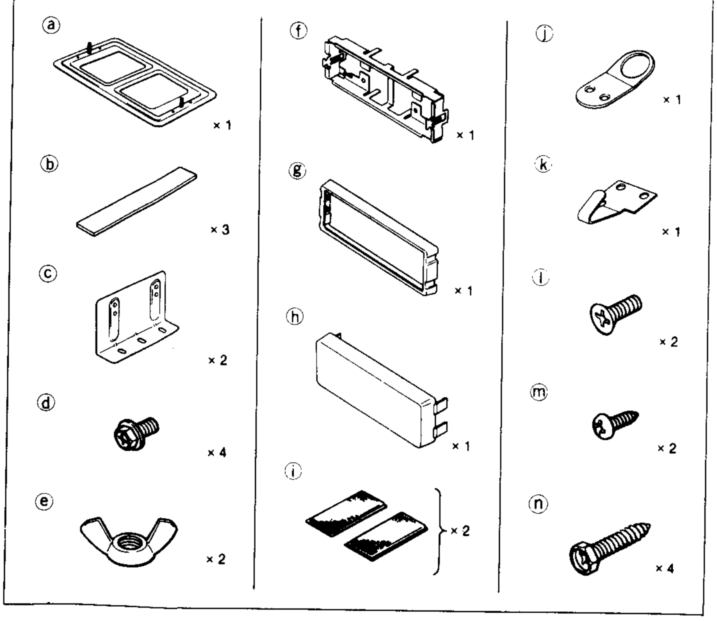
Install the CD player in the trunk room of a car, and the remote commander in the dashboard or on the wall of the car.

Installation with the Sony XT-10 FM/AM tuner unit (optional)

The optional XT-10 tuner unit can be attached to the bottom of the changer using the mounting hardware supplied with the tuner unit. For details about the tuner installation, refer to the instruction manual of the tuner unit.

SUPPLIED MOUNTING HARDWARE

Before installation, check if you have all the supplied mounting hardware listed below.

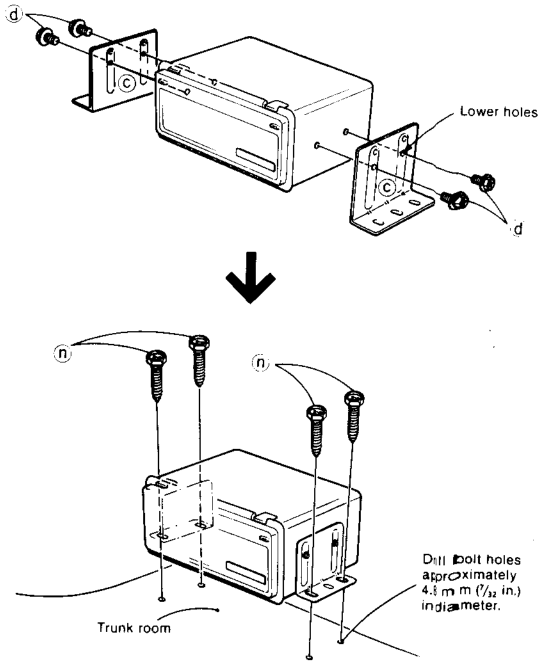


Mounting diagram 1

Follow the illustrations below for safe and secure installation.

To prevent serious damage to the car and the unit, choose the mounting location carefully, observing the following:

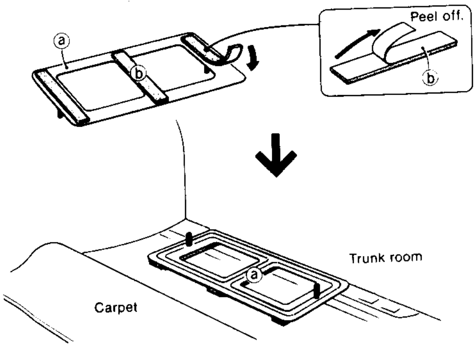
- The fuel tank should not be damaged by the tapping screws.
- There should be no wire harnesses nor pipelines under the place where you are going to install this unit.
- The spare tire, tools or other equipments in and/or under the trunk room should not be interfered with nor damaged by the screws or the unit itself.



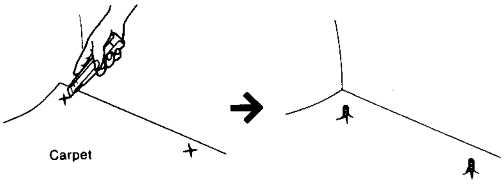
Drill bolt holes approximately 4.8 mm (7/32 in.) in diameter.

Mounting diagram 2

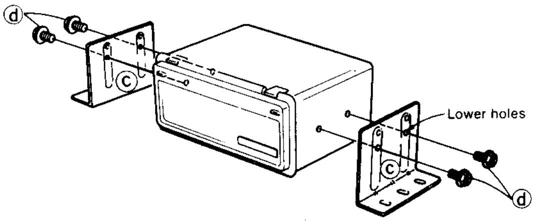
1 Attach ⓑ on the rear of ⓐ.
Put ⓐ under the carpet, on a level surface (±15° slope) of the floor in the trunk room for secure mounting.



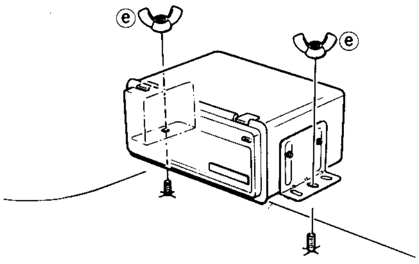
2 Cut the carpet as shown.



3 Attach ⓒ to the unit. When you use the optional XT-10 tuner unit, use the upper holes.



4 Set the unit on the carpet and fasten it with ⓔ.



After completion of the installation, make sure that the mounting is secure, so that the unit does not move around when the car starts or the brakes are applied.

Cautions

- Be sure to use only the supplied mounting hardware for a safe and secure installation.
- Avoid installing the unit where the adhesive strength of the sponges (part ⓑ) will become weaker due to radiation heat from the muffler, the unevenness of the trunk room floor, or dirt or grease on the sponges' surfaces.
- If enough adhesive strength cannot be obtained from the sponges to keep the unit securely, install the unit following the mounting diagram 1 on page CD-18.

INSTALLATION OF THE REMOTE COMMANDER

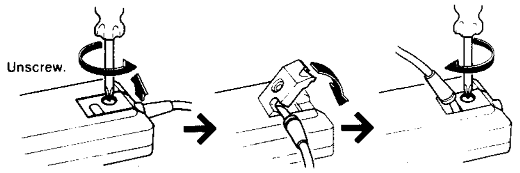
Before installation

- Choose the mounting location carefully so that the unit will not interfere with normal driving functions and so that the unit will not be exposed to direct sunlight or hot air from the heater.
- This commander can be installed in three ways as shown in illustrations A - C.

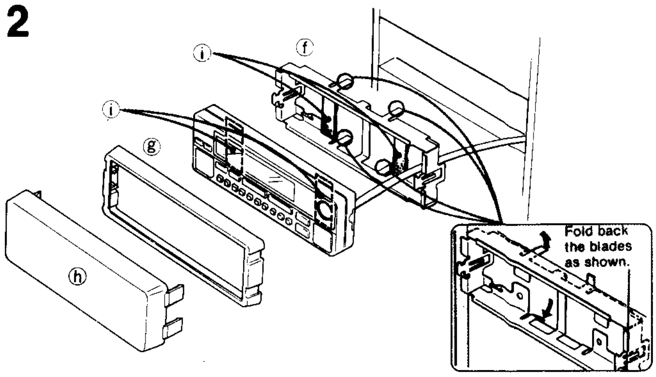
If you are unsure of the best installation, please ask for assistance at the shop where the unit was purchased, or your nearest dealer.

A **Installing in the dashboard of the car room using the metal fittings**

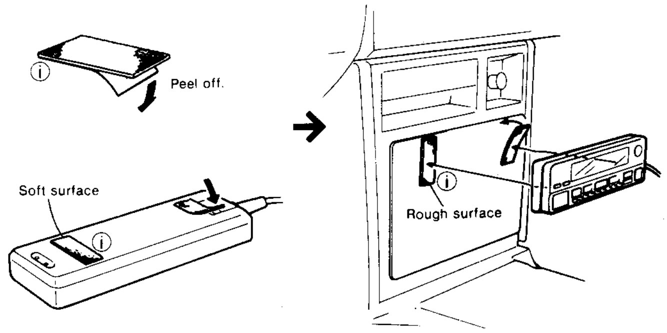
1



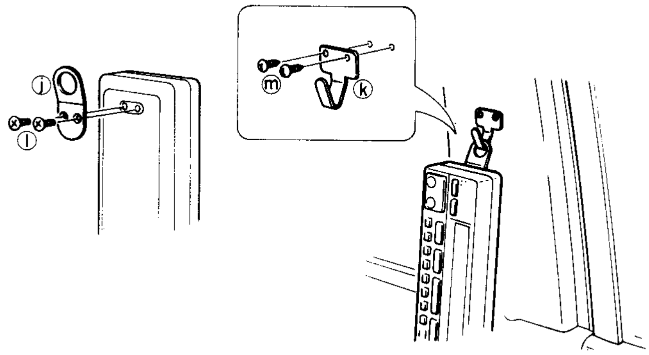
2



B **Installing on the dashboard using the Velcro tapes**



C **Installing on the wall of the car room using the metal fittings**



CONNECTIONS

Caution

- Before making connections, disconnect the ground terminal of the car battery to avoid short circuits.
- Connect the **yellow, green** and **red** power input leads only after all other leads have been connected.
- Be sure to connect the **red** power input lead to the positive 12 V power terminal which is energized when the ignition key is in the accessory position.
- Run all ground wires to a common ground point.
- Attach the supplied ground wire.

Memory-hold connection
When the yellow power input lead is connected as shown, power will be always supplied to the memory circuit even when the ignition key is switched off.

The name and function of each lead from the CDX-A10 or CDX-J10 can be determined by its color as described below.

Red	Power input lead
Yellow	Power input lead
Black	Ground wire
Blue	Power amp control output lead
Gray	Remote control input lead
Green	Lighting lead*

*When this lead is connected to the lighting control terminal, the illumination of the remote commander is on when the car's instrument panel is lit. If you do not want to synchronize both illuminations, or if your car does not have the lighting control terminal, connect the lead to the ⊕ 12 V power terminal which is energized when the ignition key is in the accessory position.

After all leads have been connected, press the RESET button of the CDX-A10 or CDX-J10 with a pencil or similar object.

EXAMPLE 1: With the optional XT-10 tuner unit

Power antenna connection
When you use a power antenna, connect the blue lead of the CDX-A10 or CDX-J10 or the power antenna relay control lead of the XT-10 to the power antenna relay box.

Note: A power antenna without a relay control box cannot be used with this unit.

Using the remote commander, you can control the power antenna.

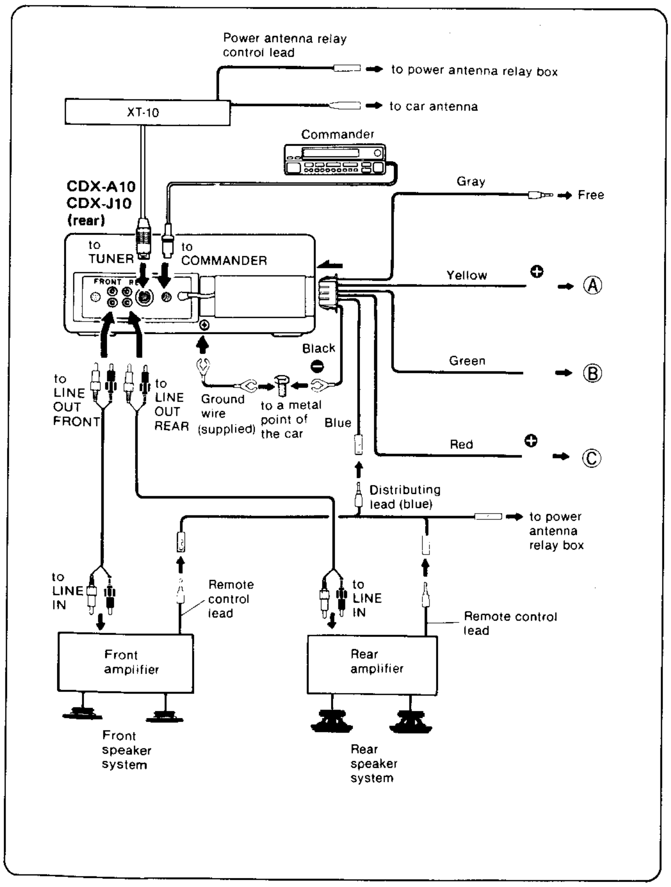
When you connect the power antenna relay control lead of the XT-10 to the power antenna relay box, press the TUNER/BAND button to raise the antenna. When the ALL OFF button or the ▶II/DISC button is pressed, the antenna will be automatically retracted.

When you connect the blue lead of the CDX-A10 or CDX-J10 to the power antenna relay box, press the TUNER/BAND button or the ▶II/DISC button to raise the antenna. When the ALL OFF button is pressed, the antenna will be automatically retracted.

For details about the power antenna, refer to the power antenna instruction manual.

Ⓐ Ⓑ Ⓒ in the following illustrations are connected to each terminal below.

Ⓐ	to the ⊕ 12 V power terminal which is energized at all times
Ⓑ	to the lighting control terminal
Ⓒ	to the ⊕ 12 V power terminal which is energized when the ignition key is in the accessory position

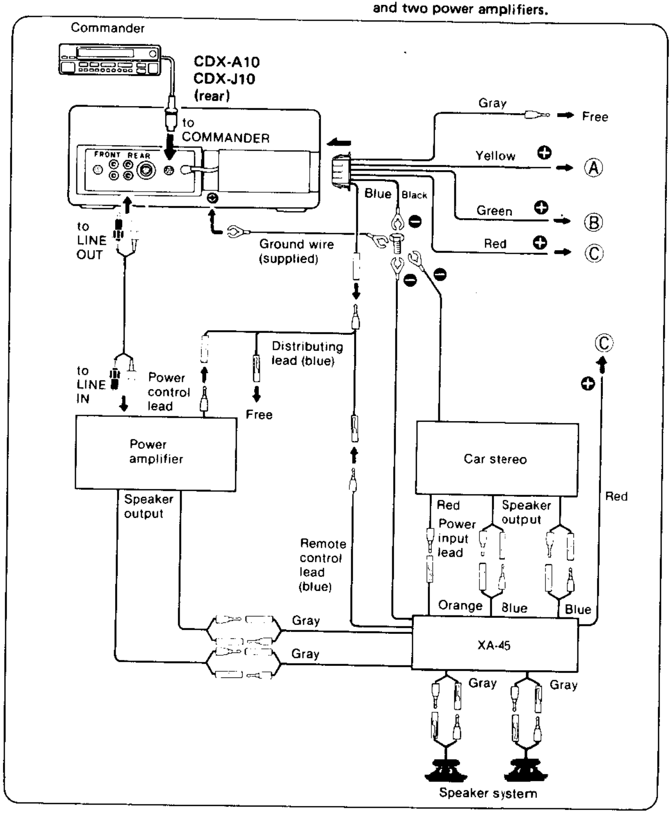

Power antenna relay control lead
to power antenna relay box
XT-10
to car antenna
Commander
CDX-A10
CDX-J10
(rear)
Gray
Free
to TUNER
to COMMANDER
FRONT REAR
Yellow
⊕
Ⓐ
Black
⊖
Green
Ⓑ
to LINE OUT FRONT
to LINE OUT REAR
Ground wire (supplied)
to a metal point of the car
Blue
Red
⊕
Ⓒ
Distributing lead (blue)
to power antenna relay box
to LINE IN
Remote control lead
to LINE IN
Remote control lead
Front amplifier
Rear amplifier
Front speaker system
Rear speaker system

EXAMPLE 2: With an optional car stereo equipped with Speaker output

Use the Sony XA-45 system selector (optional), which can select the sound source between that of the CDX-A10 or CDX-J10 and that of the optional car stereo.

Notes

- When the CDX-A10 or CDX-J10 is turned on, the connected car stereo will be turned off.
  To listen to the car stereo, turn the CDX-A10 or CDX-J10 off.
- For 4-speaker system, connect two XA-45s and two power amplifiers.

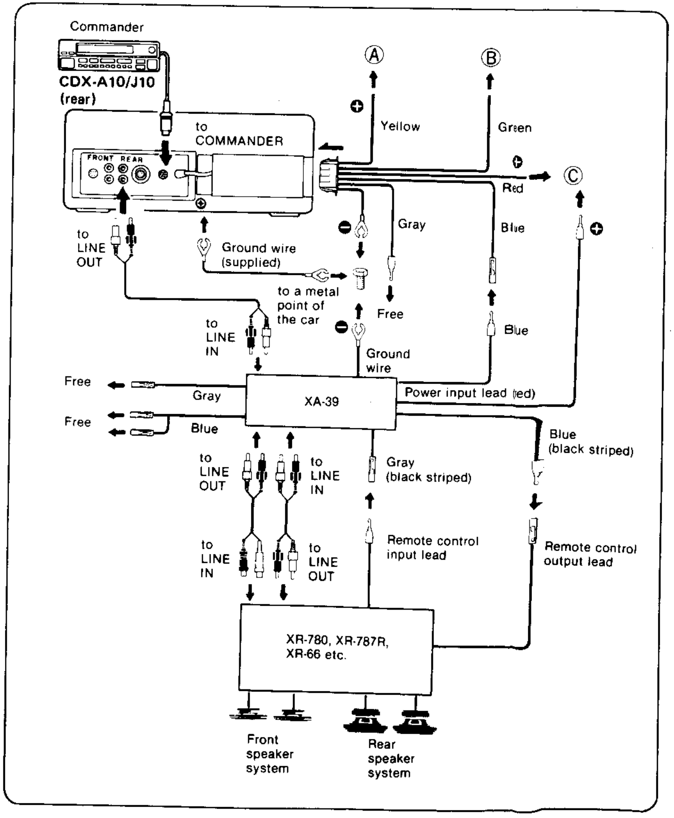

Commander
CDX-A10
CDX-J10
(rear)
to COMMANDER
FRONT REAR
Gray
Free
Yellow
⊕
Ⓐ
Blue
Black
⊖
Green
⊕
Ⓑ
Red
⊕
Ⓒ
to LINE OUT
Ground wire (supplied)
⊖
Distributing lead (blue)
Ⓒ
⊕
to LINE IN
Power control lead
Free
Power amplifier
Car stereo
Red
Speaker output
Red
Power input lead
Speaker output
Remote control lead (blue)
Orange
Blue
Blue
Gray
Gray
XA-45
Gray
Gray
Speaker system

EXAMPLE 3: With an optional car stereo equipped with LINE INPUT and OUTPUT jacks

(Such as Sony car stereo XR-780, XR-787R, XR-66 etc.)

Note
If the LINE IN jacks of the XA-39 is connected to the LINE OUT FRONT jacks of the CDX-A10 or CDX-J10, there will be no surround effect.

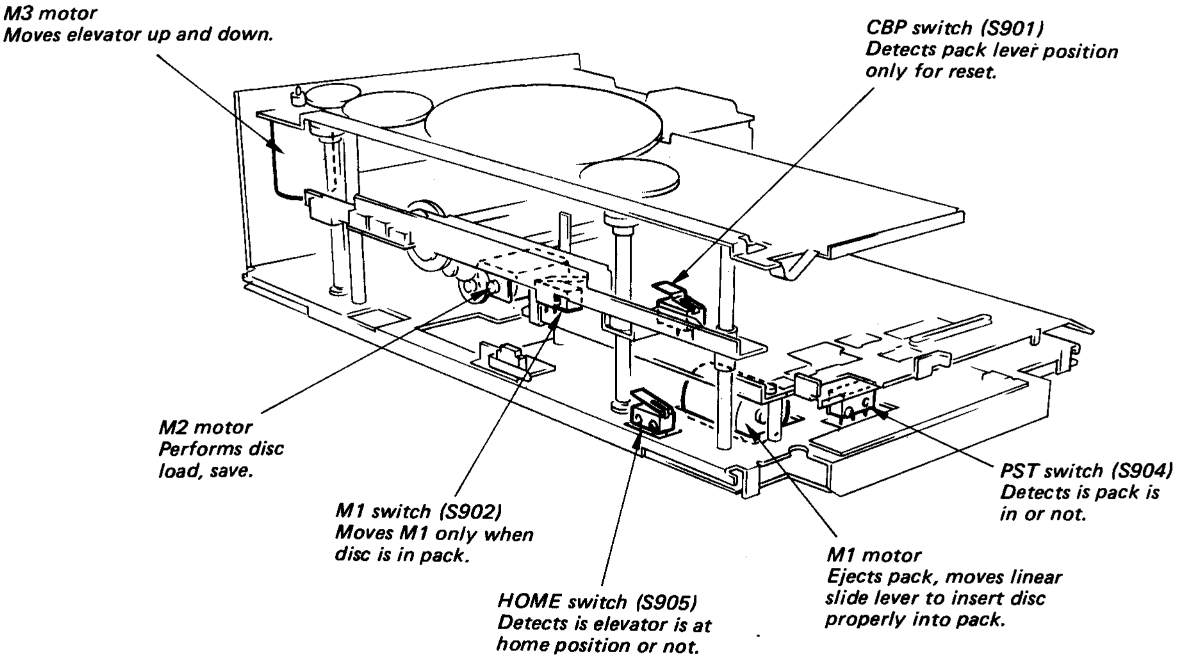
If the LINE IN jacks of the XA-39 is connected to the LINE OUT REAR jacks of the CDX-A10 or CDX-J10, the surround effect will be activated for both the front and rear speakers.

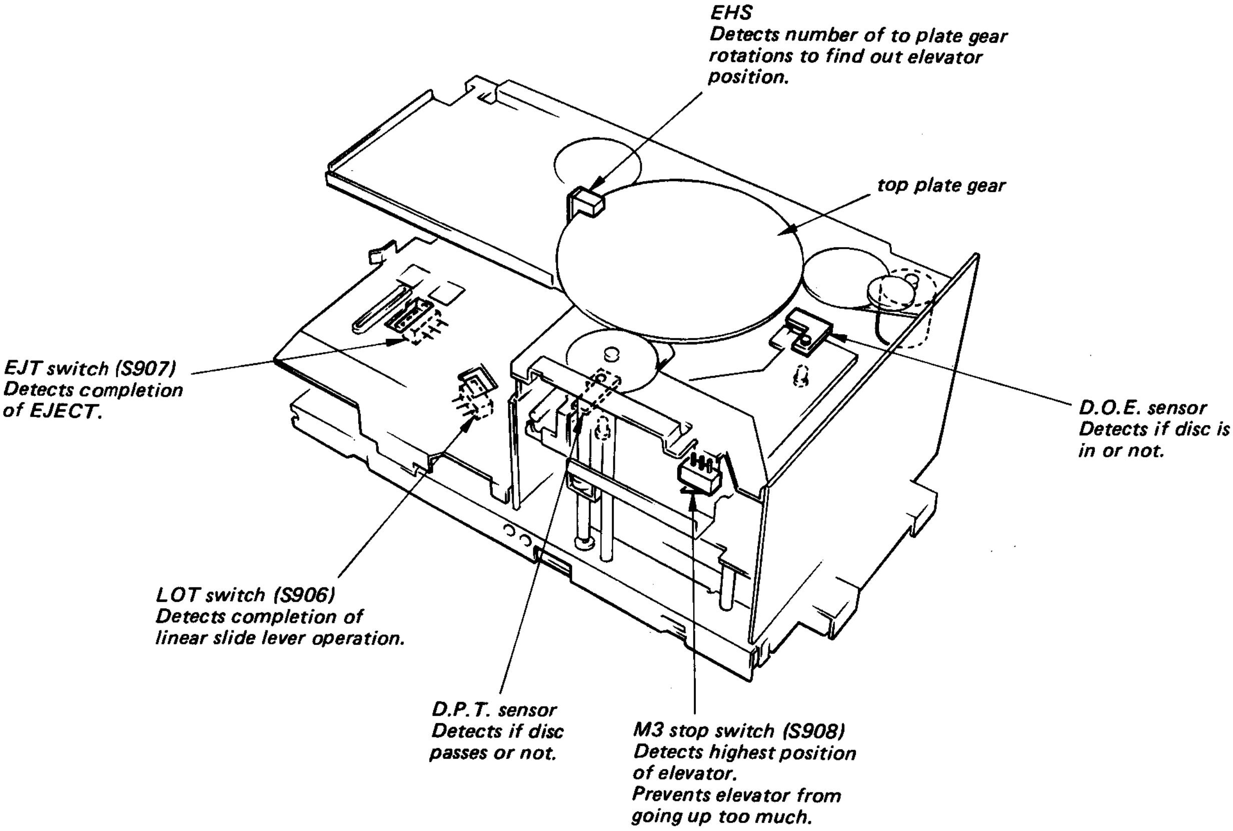

Commander
CDX-A10/J10
(rear)
Ⓐ
Ⓑ
⊕
Yellow
Green
to COMMANDER
FRONT REAR
⊕
Ⓒ
Red
⊕
Gray
Blue
to LINE OUT
Ground wire (supplied)
to a metal point of the car
Free
to LINE IN
Blue
Ground wire
Free
Gray
XA-39
Power input lead (red)
Free
Blue
Blue (black striped)
to LINE OUT
to LINE IN
Gray (black striped)
to LINE IN
to LINE OUT
Remote control input lead
Remote control output lead
XR-780, XR-787R, XR-66 etc.
Front speaker system
Rear speaker system

SECTION 1
OUTLINE

1-1. TECHNICAL DESCRIPTION

1-1-1. Switch and Sensor Operations


M3 motor
Moves elevator up and down.
CBP switch (S901)
Detects pack lever position only for reset.
M2 motor
Performs disc load, save.
PST switch (S904)
Detects is pack is in or not.
M1 switch (S902)
Moves M1 only when disc is in pack.
M1 motor
Ejects pack, moves linear slide lever to insert disc properly into pack.
HOME switch (S905)
Detects is elevator is at home position or not.

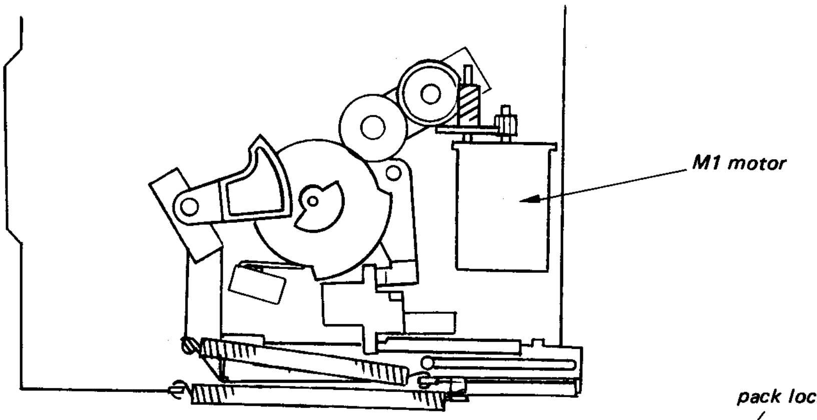

EHS
Detects number of to plate gear rotations to find out elevator position.
top plate gear
EJT switch (S907)
Detects completion of EJECT.
D.O.E. sensor
Detects if disc is in or not.
LOT switch (S906)
Detects completion of linear slide lever operation.
D.P.T. sensor
Detects if disc passes or not.
M3 stop switch (S908)
Detects highest position of elevator.
Prevents elevator from going up too much.

1-1-2. Motor Operations

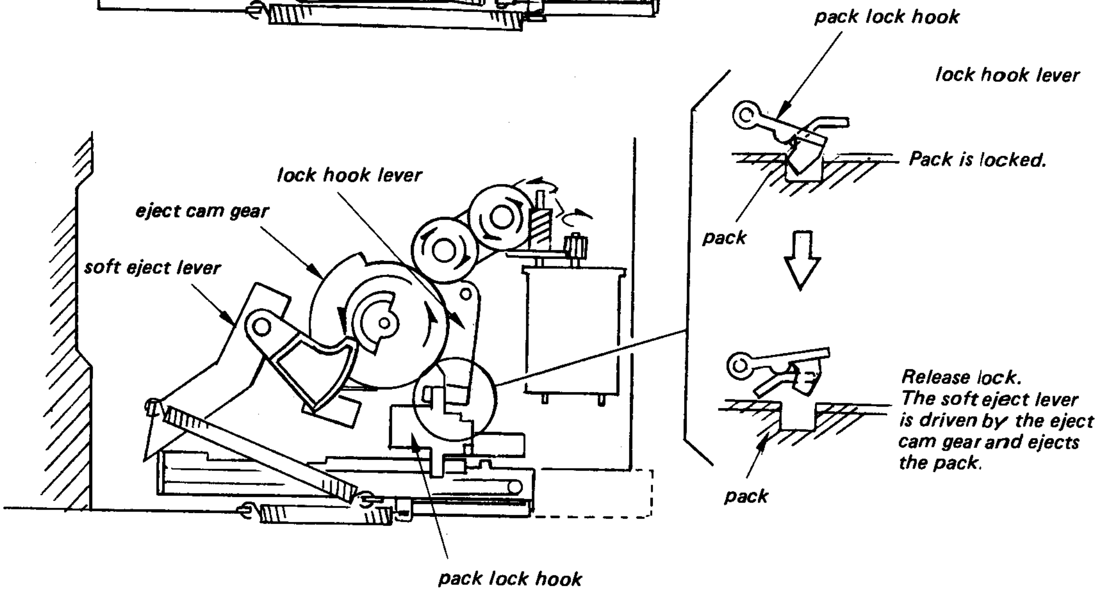
1) M1 Motor Operation

- **Pack Eject Operation**

❶ *Eject start.*

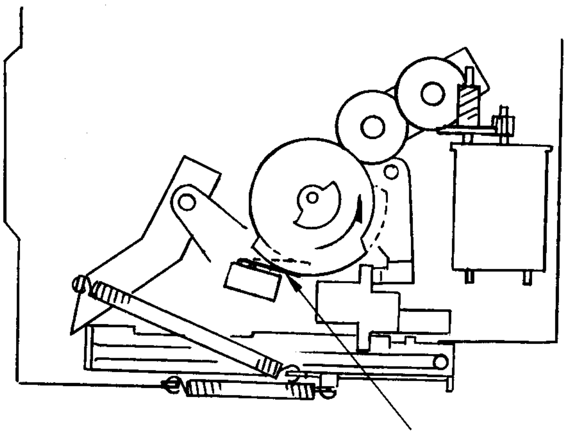


❷


pack lock hook
lock hook lever
Pack is locked.
pack
lock hook lever
eject cam gear
soft eject lever
pack
pack lock hook

Release lock.
The soft eject lever is driven by the eject cam gear and ejects the pack.

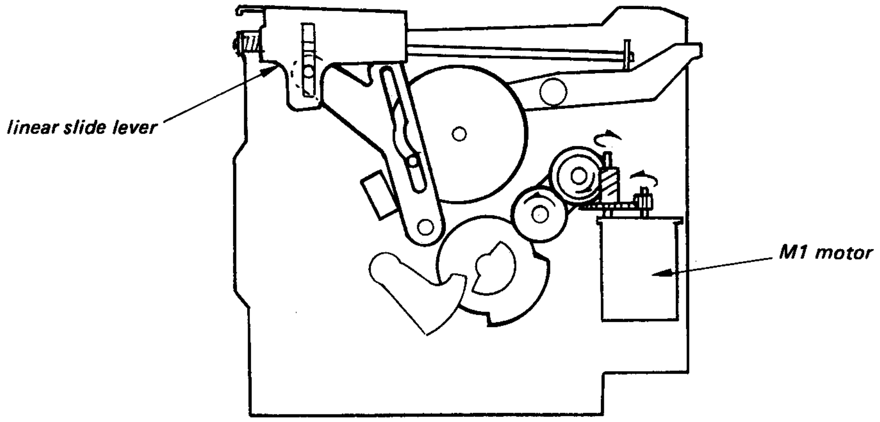
❸



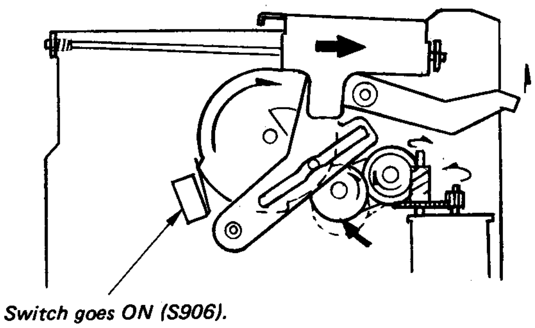
When the switch goes on, the motor rotates until the switch goes off.

- **Linear Slide Lever Operation**

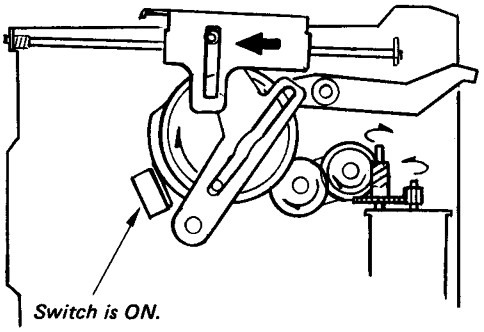
❶ *Eject start.*


linear slide lever
M1 motor

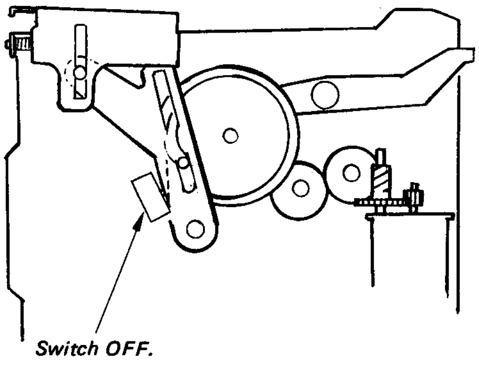
❷ *The disc should be inserted properly into the pack for disc save or reset.*


Switch goes ON (S906).

❸ *On the way back to the original position.*


Switch is ON.

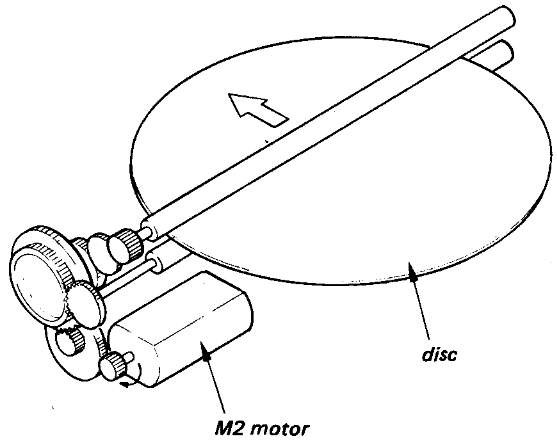
❹ *Switch off, motor rotation stops.*

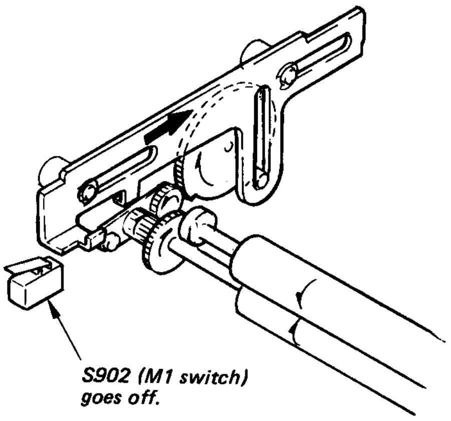


2) M2 Motor Operations

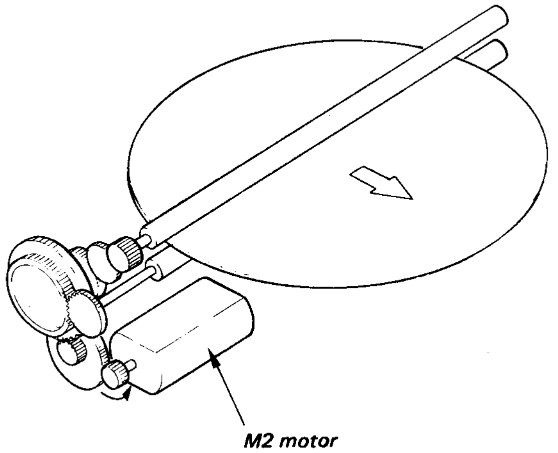
- **Disc Load Operation**

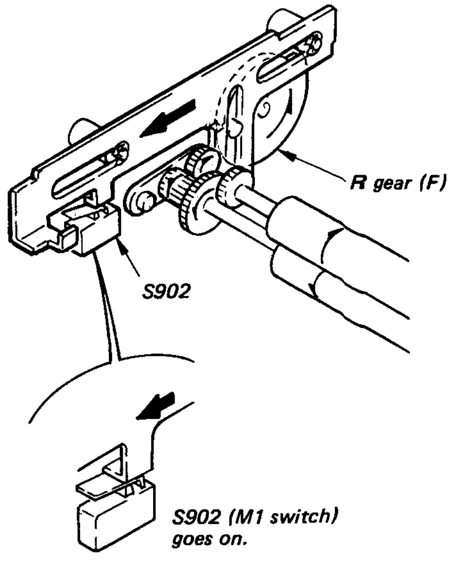
Check S902 state to see if disc is being saved or loaded.


disc
M2 motor


S902 (M1 switch) goes off.

- **Disc Save Operation**

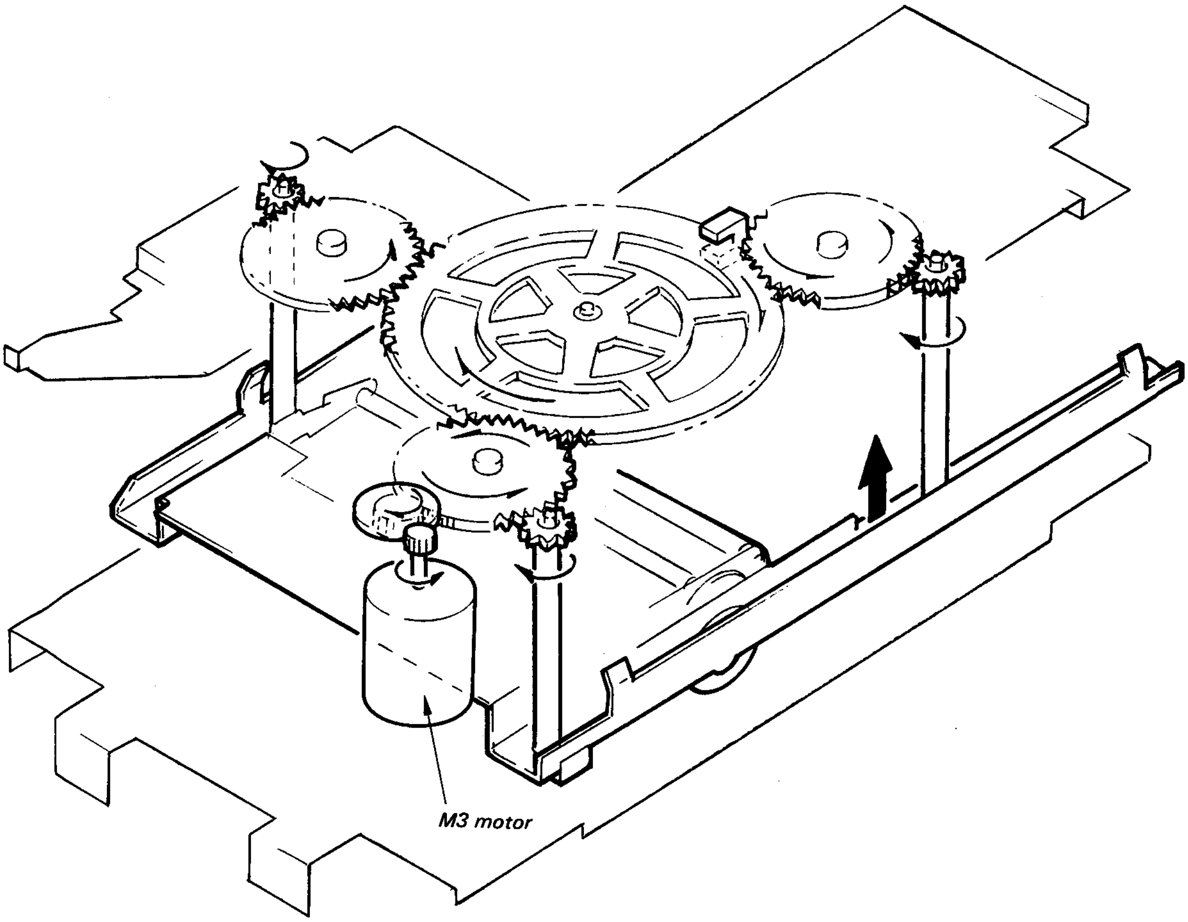



R gear (F)
S902
S902 (M1 switch) goes on.

3) M3 Motor Operation

- **Elevator UP/DOWN**

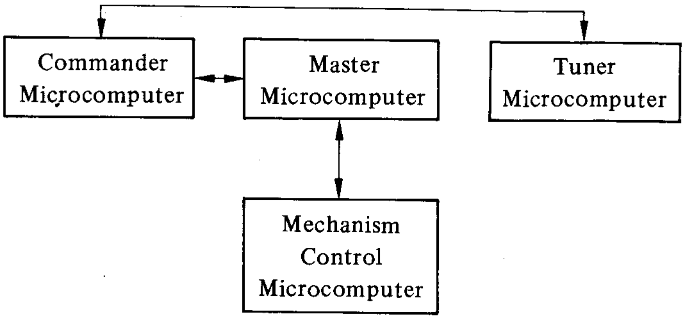
When M3 motor rotates in the direction of the arrow, the elevator moves up.



1-2. CIRCUIT DESCRIPTION

Description of IC's

On this model, data and control signal transmission and reception is done among the commander microcomputer, master microcomputer and mechanism control microcomputer. The various operations are performed by these signals.



Master Microcomputer (IC503) Pin Functions

Pin No.	Input/ Output	Function
1	O	Not used.
2	O	Clock for serial data transmission.
3	O	"L" during data output to commander; otherwise "H".
4	O	Data output.
5	O	Data end signal to IC507.
6	I	Remote control signal input; "L" when there is input.
7	I	Checks accessory ON/OFF.
8	I	Signal input from mechanism control microcomputer (IC504). Informs master of time code renewal, error, command execution completion, etc. L: active
9	I	Acknowledge signal input from mechanism control microcomputer (IC504). Signal means IC504 has received data.
10	O	Muting output.
11	O	After this pin is made low, data transmission between mechanism control microcomputer (IC504) and master microcomputer (IC503) is performed.
12	O	Indicates data transmission direction between mechanism control microcomputer (IC504) and master microcomputer (IC503). L: from IC504 to IC503 H: from IC503 to IC504
13	O	Indicates if address is being output or data is being input/output to mechanism control microcomputer (IC504). H: address L: data
14 – 17	I/O	Lines for data communication between mechanism control microcomputer (IC504) and master microcomputer (IC503).
18	I	Reset input pin. Program start from 0 address when it goes from H to L.
19	I	Clock oscillation pin.
21	O	4.19 MHz
20	I	Power supply pin. +5 V.

<table>
<tr><th>Pin No.</th><th>Input/ Output</th><th>Function</th></tr>
<tr><td>22</td><td>I</td><td>External interrupt input pin. Interrupt is generated when EHS sensor goes from low to high.</td></tr>
<tr><td>23</td><td>I</td><td>Monitors EHS state.</td></tr>
<tr><td>24</td><td>I</td><td>Clock input pin for serial data output from commander.</td></tr>
<tr><td>25</td><td>I</td><td>Not used.</td></tr>
<tr><td>26</td><td>I</td><td>Input pin for serial data output from commander.</td></tr>
<tr><td>27</td><td>O</td><td>DD converter ON/OFF
Accessory ON: H
Accessory OFF: L
During accessory off, goes high for EJECT or PACK SET.</td></tr>
<tr><td>28 – 30</td><td>O</td><td>S1 – S3 } Key Matrix signals</td></tr>
<tr><td>31 – 34</td><td>I</td><td>Ko – K3</td></tr>
<tr><td>35</td><td>O</td><td>Not used</td></tr>
<tr><td>36</td><td>O</td><td>IC303 chip enable pin. H during data output.</td></tr>
<tr><td>37, 38</td><td>O</td><td>Control output to elevator control motor (M3) control IC.
<table>
<tr><th>pin ㊲</th><th>pin ㊳</th><th></th></tr>
<tr><td>H</td><td>L</td><td>DOWN</td></tr>
<tr><td>L</td><td>H</td><td>UP</td></tr>
</table></td></tr>
<tr><td>39</td><td></td><td>Ground.</td></tr>
<tr><td>40</td><td></td><td>Not used.</td></tr>
</table>

Key Matrix Signals (IC503 pins ㉘ – ㉞)

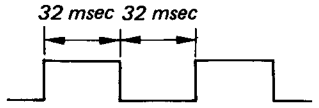
	K0 (㉛)	K1 (㉜)	K2 (㉝)	K3 (㉞)
S_1 (㉘)	DSPSEL	TPACK	BU	HOT
S_2 (㉙)	LOT	PST	CBP	EJT
S_3 (㉚)	EJKEY	HOME	DOE	DPT

DSPSEL

ON when DSPSEL output by commander is high.

Determines timing for data output from master microcomputer to commander. Output begins at the edge of going from ON to OFF, so when OFF, output can not be done.

In accessory ON state, the program stops unless there is DSPSEL input signal.



TPACK

Judges whether tuner is connected or not.

Only monitors the switch during accessory ON.

BU

Checks backup voltage. Goes ON when voltage is high.

HOT

Goes ON when temperature is too high.

When it goes ON, the same operation occurs as when the ALL OFF key is pressed.

No keys, except for EJECT, are accepted while it is ON.

LOT

ON during linear slide lever operation, OFF when operation ends.

PST

ON when pack is in.

CBP

Detects pack lever, and returns disc to that position when ON.

EJT

Goes ON when pack ejection is completed.

EJKEY

EJECT KEY input; always accepted except for during reset processing and pack setting.

HOME

Home switch detection; only performs home switch detection for reset processing and elevator control.

DOE

Detects if disc is in or not for reset processing and LOAD processing.

DPT

Detects if disc was in or not for reset processing, LOAD processing and SAVE processing.

IC507 Pin Functions

<table>
<tr><th>Pin No.</th><th>Function</th></tr>
<tr><td>1, 2, 4</td><td>M1 motor (EJECT/LEVER OUT), M2 motor (SAVE/LOAD) contol
<table>
<tr><th>①</th><th>②</th><th>④</th><th>Operation</th></tr>
<tr><td>H</td><td>L</td><td>L</td><td>EJECT</td></tr>
<tr><td>L</td><td>H</td><td>L</td><td>LOAD</td></tr>
<tr><td>L</td><td>L</td><td>H</td><td>SAVE, LEVER OUT</td></tr>
<tr><td>H</td><td>L</td><td>H</td><td>SAVE</td></tr>
<tr><td>L</td><td>L</td><td>L</td><td>OFF</td></tr>
</table></td></tr>
<tr><td>3</td><td>Commander reset signal output.</td></tr>
<tr><td>5</td><td>Mechanism control microcomputer (IC504), IC501, etc. reset signal output.
Outputs high after chucking is completed, turns IC504 power on then outputs low 200 msec later.</td></tr>
<tr><td>6</td><td>DRS ON at high.</td></tr>
<tr><td>7</td><td>SURROUND ON/OFF</td></tr>
<tr><td>8</td><td>DRS2 when both pins ⑥ and ⑧ are high.</td></tr>
<tr><td>9</td><td>IC504, etc. power supply control and output fro tuner and DC signal switching. Outputs low except for when CD signal switching. Output low except for when CD is in PLAY or PAUSE.</td></tr>
<tr><td>10</td><td>Ground</td></tr>
<tr><td>11</td><td>Remote output.</td></tr>
<tr><td>12</td><td>LED drive for display during PACK reset.</td></tr>
<tr><td>13</td><td>BEEP output. Outputs high for about 32 msec.</td></tr>
<tr><td>16</td><td>Reset signal input. L: reset</td></tr>
<tr><td>17</td><td>When this pin is made high, internal register state is shifted to latch.</td></tr>
<tr><td>18</td><td>Serial data input pin.</td></tr>
<tr><td>19</td><td>Clock input pin. Takes data in at rise.</td></tr>
<tr><td>20</td><td>Power supply in +5 V.</td></tr>
</table>

IC801 Pin

Pin No.
1
2, 3, 4
5
6
7
8
9
10, 11
12
13
14
15
16 – 19
20, 21
22
23, 24, 2
26
27 – 30
31 – 54
55
56
57
58
59
60 – 63
64

EJT
Goes ON when pack ejection is completed.

EJKEY
EJECT KEY input; always accepted except for during reset processing and pack setting.

HOME
Home switch detection; only performs home switch detection for reset processing and elevator control.

DOE
Detects if disc is in or not for reset processing and LOAD processing.

DPT
Detects if disc was in or not for reset processing, LOAD processing and SAVE processing.

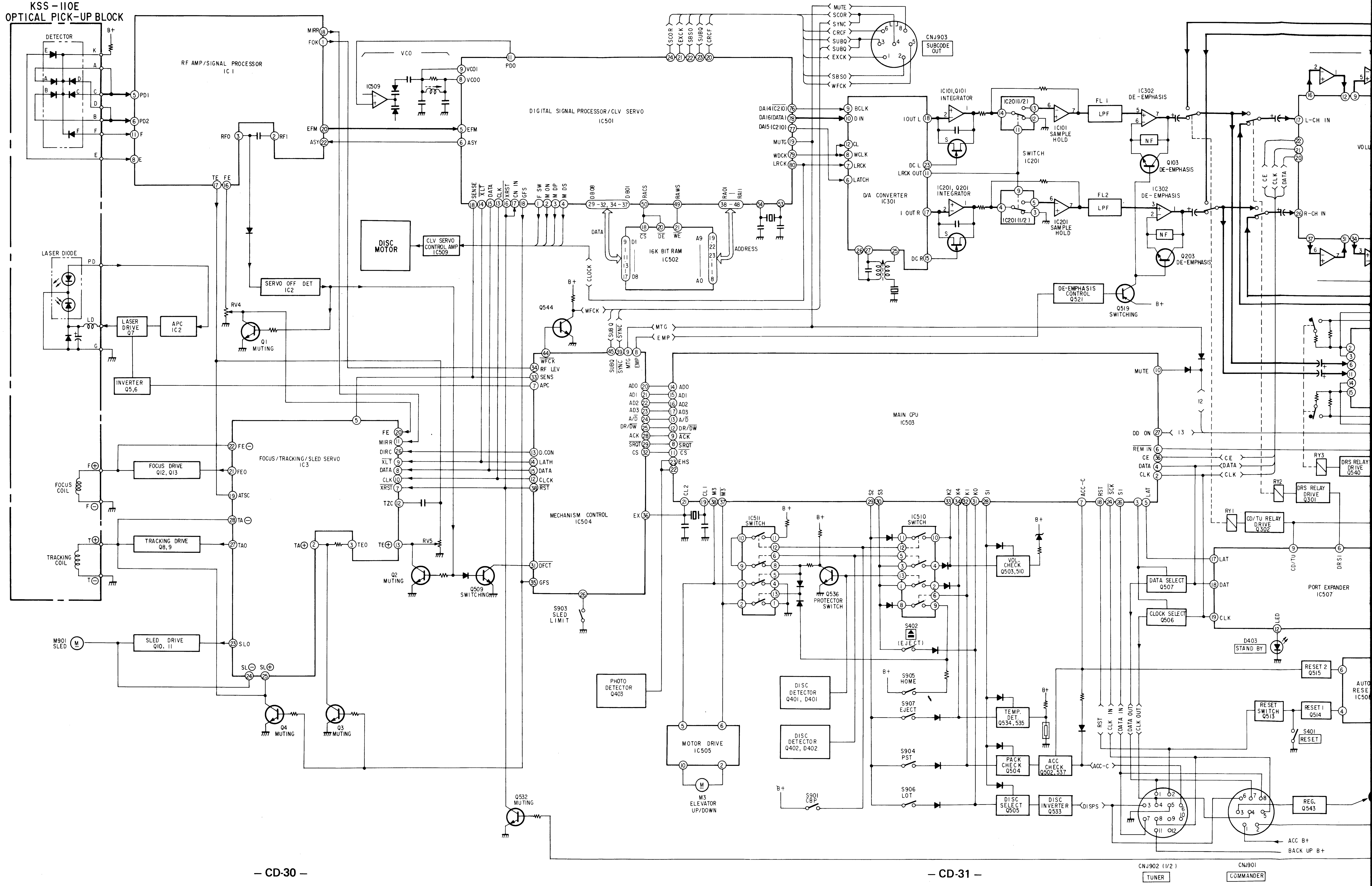
IC507 Pin Functions

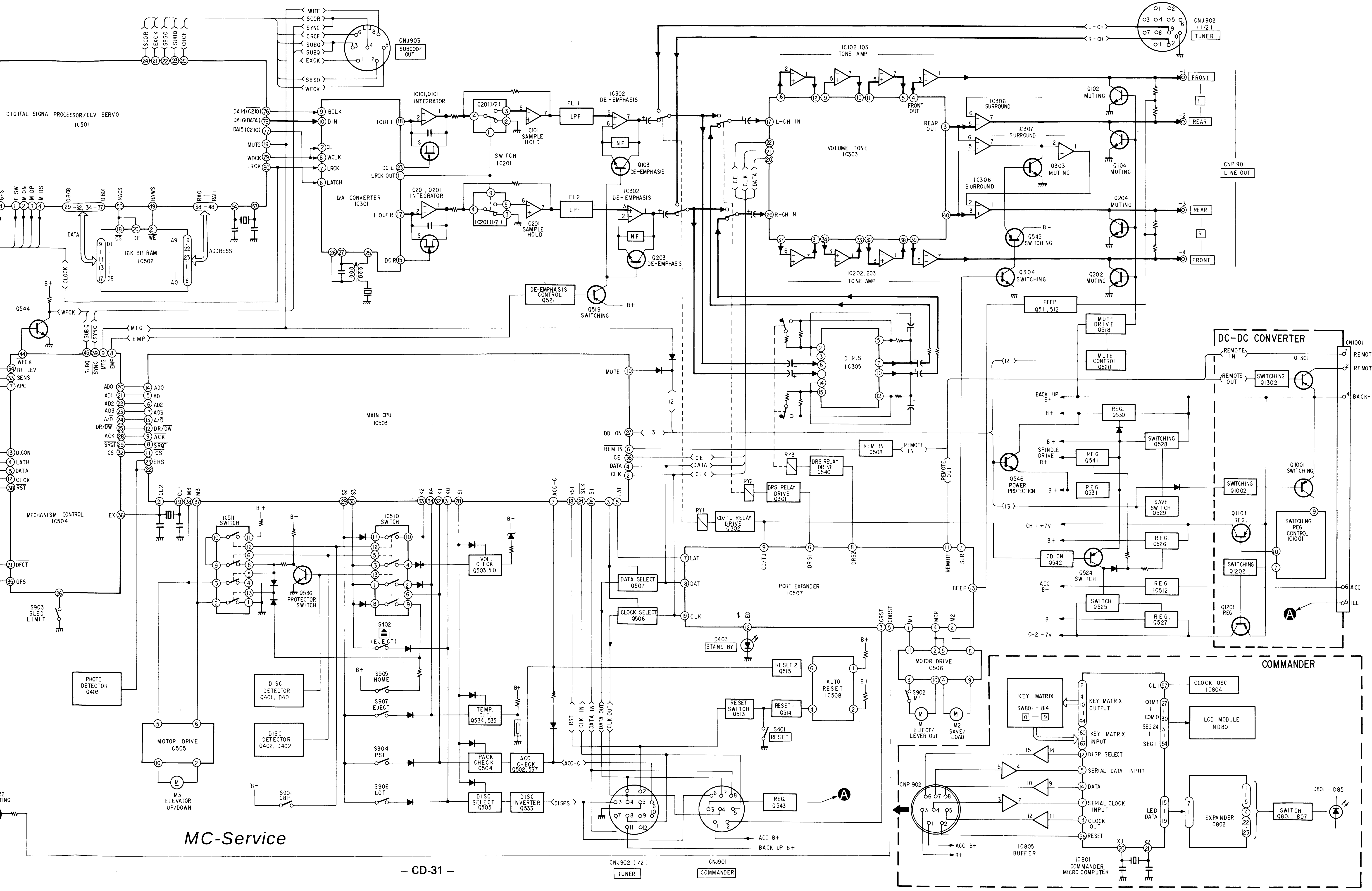
<table>
<tr><th>Pin No.</th><th>Function</th></tr>
<tr><td>1, 2, 4</td><td>M1 motor (EJECT/LEVER OUT), M2 motor (SAVE/LOAD) control
<table>
<tr><th>①</th><th>②</th><th>④</th><th>Operation</th></tr>
<tr><td>H</td><td>L</td><td>L</td><td>EJECT</td></tr>
<tr><td>L</td><td>H</td><td>L</td><td>LOAD</td></tr>
<tr><td>L</td><td>L</td><td>H</td><td>SAVE, LEVER OUT</td></tr>
<tr><td>H</td><td>L</td><td>H</td><td>SAVE</td></tr>
<tr><td>L</td><td>L</td><td>L</td><td>OFF</td></tr>
</table></td></tr>
<tr><td>3</td><td>Commander reset signal output.</td></tr>
<tr><td>5</td><td>Mechanism control microcomputer (IC504), IC501, etc. reset signal output.
Outputs high after chucking is completed, turns IC504 power on then outputs low 200 msec later.</td></tr>
<tr><td>6</td><td>DRS ON at high.</td></tr>
<tr><td>7</td><td>SURROUND ON/OFF</td></tr>
<tr><td>8</td><td>DRS2 when both pins ⑥ and ⑧ are high.</td></tr>
<tr><td>9</td><td>IC504, etc. power supply control and output fro tuner and DC signal switching. Outputs low except for when CD signal switching. Output low except for when CD is in PLAY or PAUSE.</td></tr>
<tr><td>10</td><td>Ground</td></tr>
<tr><td>11</td><td>Remote output.</td></tr>
<tr><td>12</td><td>LED drive for display during PACK reset.</td></tr>
<tr><td>13</td><td>BEEP output. Outputs high for about 32 msec.</td></tr>
<tr><td>16</td><td>Reset signal input. L: reset</td></tr>
<tr><td>17</td><td>When this pin is made high, internal register state is shifted to latch.</td></tr>
<tr><td>18</td><td>Serial data input pin.</td></tr>
<tr><td>19</td><td>Clock input pin. Takes data in at rise.</td></tr>
<tr><td>20</td><td>Power supply in +5 V.</td></tr>
</table>

IC801 Pin Functions

Pin No.	Function
1	Not used.
2, 3, 4	Key matrix output pins
5	Serial data input pin
6	
7	Serial clock input pin
8	
9	
10, 11	Key matrix output pins.
12	Output pin for 32 msec cycle rectangular wave for sync when master microcomputer (IC503) and tuner microcomputer send serial data.
13	Clock output pin for sending key input commands to master microcomputer and tuner microcomputer. (normally "H")
14	Data output pin for sending key input commands to master microcomputer and tuner microcomputer.
15	Signal output pin for operating IC802.
16 – 19	Signal output pins for lighting up LEDs.
20, 21	Clock oscillation
22	Ground
23, 24, 25	Power supply input pins for LCD.
26	Power supply pin.
27 – 30	Common signal output pins for LCD.
31 – 54	Segment signal output pins for LCD.
55	
56	Reset signal input pin.
57	System clock signal input.
58	Power supply pin.
59	Not used.
60 – 63	Key matrix input pins.
64	Key matrix output pin.

1-3. BLOCK DIAGRAM


KSS-110E
OPTICAL PICK-UP BLOCK
DETECTOR
LASER DIODE
LASER DRIVE Q7
APC IC2
INVERTER Q5,6
FOCUS COIL
TRACKING COIL
M901 SLED
RF AMP/SIGNAL PROCESSOR IC1
VCO
IC509
DIGITAL SIGNAL PROCESSOR/CLV SERVO IC501
16K BIT RAM IC502
DISC MOTOR
CLV SERVO CONTROL AMP IC509
SERVO OFF DET IC2
Q1 MUTING
Q544
FOCUS/TRACKING/SLED SERVO IC3
FOCUS DRIVE Q12, Q13
TRACKING DRIVE Q8, 9
SLED DRIVE Q10, 11
Q2 MUTING
Q509 SWITCHING
Q4 MUTING
Q3 MUTING
Q532 MUTING
MECHANISM CONTROL IC504
S903 SLED LIMIT
PHOTO DETECTOR Q403
MOTOR DRIVE IC505
M3 ELEVATOR UP/DOWN
MAIN CPU IC503
CNJ903 SUBCODE OUT
IC101,Q101 INTEGRATOR
IC201,Q201 INTEGRATOR
IC201(1/2) SWITCH IC201 SAMPLE HOLD
IC101 SAMPLE HOLD
D/A CONVERTER IC301
FL1 LPF
FL2 LPF
IC302 DE-EMPHASIS
Q103 DE-EMPHASIS
Q203 DE-EMPHASIS
DE-EMPHASIS CONTROL Q521
Q519 SWITCHING
IC511 SWITCH
IC510 SWITCH
Q536 PROTECTOR SWITCH
S402 (EJECT)
S905 HOME
S907 EJECT
S904 PST
S906 LOT
S901 CBP
DISC DETECTOR Q401, D401
DISC DETECTOR Q402, D402
VOL. CHECK Q503,510
TEMP. DET. Q534,535
PACK CHECK Q504
ACC CHECK Q502,537
DISC SELECT Q505
DISC INVERTER Q533
DATA SELECT Q507
CLOCK SELECT Q506
PORT EXPANDER IC507
D403 STAND BY
RY1
CD/TU RELAY DRIVE Q302
RY2
DRS RELAY DRIVE Q301
RY3
DRS RELAY DRIVE Q540
RESET 2 Q515
RESET SWITCH Q513
RESET1 Q514
S401 RESET
REG. Q543
ACC B+
BACK UP B+
CNJ902 (1/2) TUNER
CNJ901 COMMANDER


DIGITAL SIGNAL PROCESSOR/CLV SERVO
IC501
16K BIT RAM
IC502
CNJ903
SUBCODE OUT
MUTE
SCOR
SYNC
CRCF
SUBQ
EXCK
SBSO
WFCK
IC101,Q101 INTEGRATOR
IC201, Q201 INTEGRATOR
D/A CONVERTER
IC301
IC101 SAMPLE HOLD
IC201 SAMPLE HOLD
SWITCH
IC201
FL1
FL2
LPF
IC302 DE-EMPHASIS
Q103 DE-EMPHASIS
Q203 DE-EMPHASIS
DE-EMPHASIS CONTROL
Q521
Q519 SWITCHING
IC102,103 TONE AMP
IC202, 203 TONE AMP
VOLUME TONE
IC303
L-CH IN
R-CH IN
FRONT OUT
REAR OUT
IC306 SURROUND
IC307 SURROUND
Q303 MUTING
Q102 MUTING
Q104 MUTING
Q204 MUTING
Q202 MUTING
Q545 SWITCHING
Q304 SWITCHING
CNJ902 (1/2)
TUNER
L-CH
R-CH
FRONT
REAR
CNP 901
LINE OUT
D.R.S
IC305
BEEP
Q511, 512
MUTE DRIVE
Q518
MUTE CONTROL
Q520
DC-DC CONVERTER
CN1001
REMOTE IN
REMOTE OUT
BACK-UP
SWITCHING
Q1302
Q1301
REG.
Q530
SWITCHING
Q528
SPINDLE DRIVE
REG.
Q541
Q546 POWER PROTECTION
REG.
Q531
SAVE SWITCH
Q529
SWITCHING
Q1002
Q1001 SWITCHING
Q1101 REG.
SWITCHING REG CONTROL
IC1001
SWITCHING
Q1202
Q1201 REG.
CH1 +7V
CD ON
Q542
Q524 SWITCH
REG.
Q526
REG
IC512
SWITCH
Q525
REG.
Q527
CH2 -7V
ACC
ILL
MAIN CPU
IC503
MECHANISM CONTROL
IC504
REM IN
Q508
RY3
DRS RELAY DRIVE
Q540
RY2
DRS RELAY DRIVE
Q301
RY1
CD/TU RELAY DRIVE
Q302
PORT EXPANDER
IC507
DATA SELECT
Q507
CLOCK SELECT
Q506
D403
STAND BY
RESET 2
Q515
AUTO RESET
IC508
RESET SWITCH
Q513
RESET 1
Q514
S401
RESET
MOTOR DRIVE
IC506
S902
M1
M1 EJECT/LEVER OUT
M2 SAVE/LOAD
IC511 SWITCH
IC510 SWITCH
Q536 PROTECTOR SWITCH
VOL. CHECK
Q503,510
S402
(EJECT)
S905 HOME
S907 EJECT
TEMP. DET.
Q534, 535
S904 PST
PACK CHECK
Q504
ACC CHECK
Q502, 537
S906 LOT
DISC SELECT
Q505
DISC INVERTER
Q533
S901 CBP
PHOTO DETECTOR
Q403
DISC DETECTOR
Q401, D401
DISC DETECTOR
Q402, D402
MOTOR DRIVE
IC505
M3 ELEVATOR UP/DOWN
S903 SLED LIMIT
Q544
REG.
Q543
CNJ902 (1/2)
TUNER
CNJ901
COMMANDER
ACC B+
BACK UP B+
COMMANDER
KEY MATRIX
SW801 - 814
KEY MATRIX OUTPUT
KEY MATRIX INPUT
DISP SELECT
SERIAL DATA INPUT
DATA
SERIAL CLOCK INPUT
CLOCK OUT
RESET
CLOCK OSC
IC804
LCD MODULE
ND801
LED DATA
EXPANDER
IC802
SWITCH
Q801 - 807
D801 - D851
CNP 902
IC805 BUFFER
IC801 COMMANDER MICRO COMPUTER
X1
X2
A

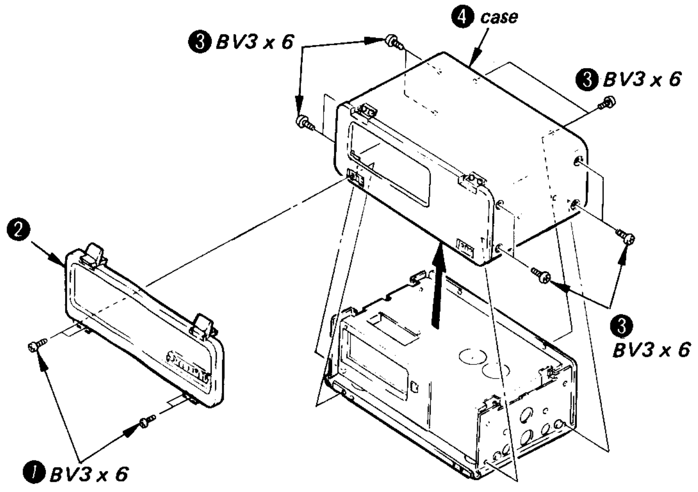
MC-Service

SECTION 2
DISASSEMBLY

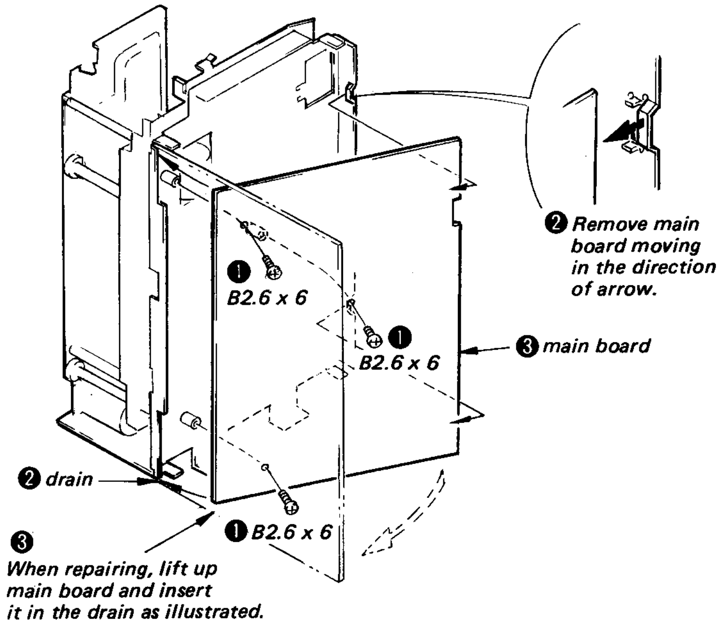
Note: Follow the disassembly procedure in the numerical order given.

2-1. REMOVAL

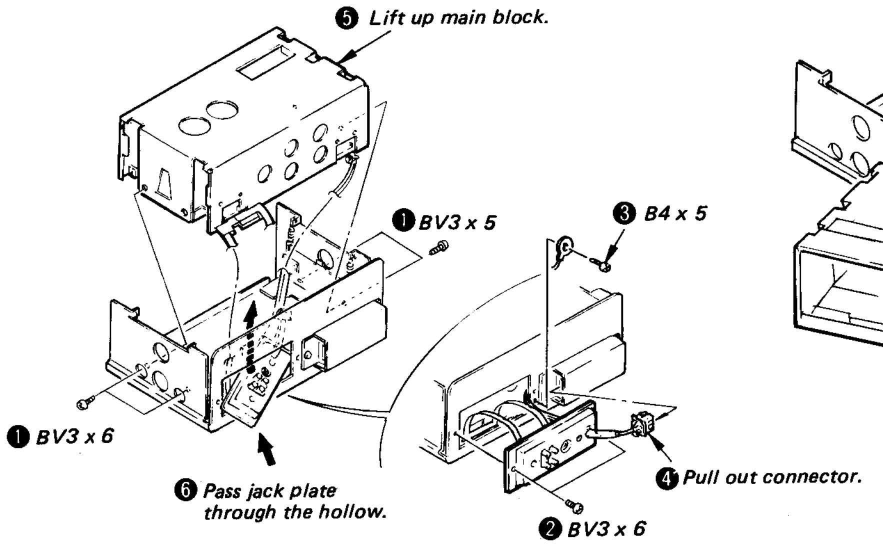
CASE


❸ BV3 x 6
❹ case
❸ BV3 x 6
❷
❸ BV3 x 6
❶ BV3 x 6

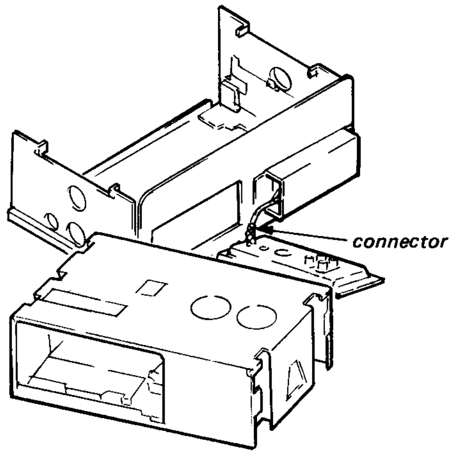
MAIN BOARD


❷ Remove main board moving in the direction of arrow.
❶ B2.6 x 6
❶ B2.6 x 6
❸ main board
❷ drain
❶ B2.6 x 6
❸ When repairing, lift up main board and insert it in the drain as illustrated.

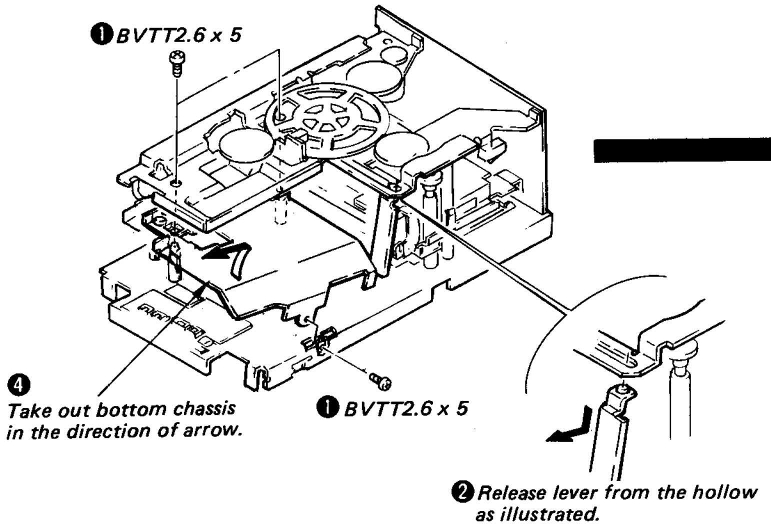
MAIN BLOCK


❺ Lift up main block.
❶ BV3 x 5
❸ B4 x 5
❶ BV3 x 6
❻ Pass jack plate through the hollow.
❹ Pull out connector.
❷ BV3 x 6

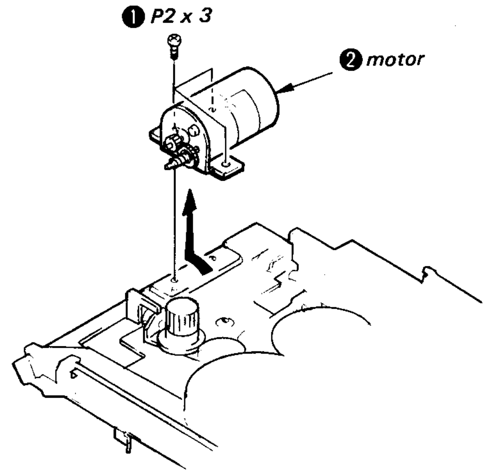
Set operates by inserting connector as illustrated below.



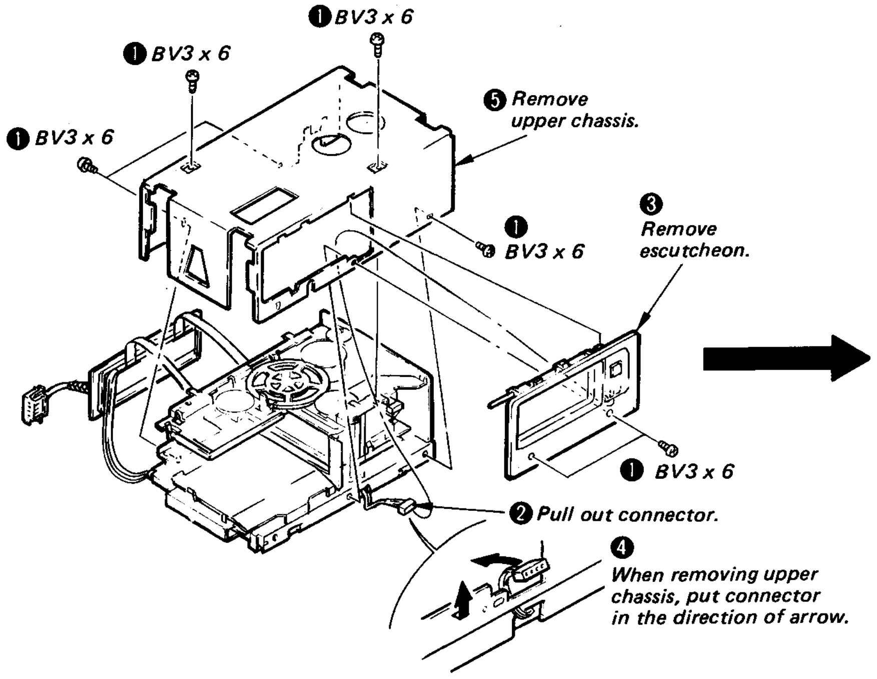
BOTTOM CHASSIS


❶ BVTT2.6 x 5
❹ Take out bottom chassis in the direction of arrow.
❶ BVTT2.6 x 5
❷ Release lever from the hollow as illustrated.

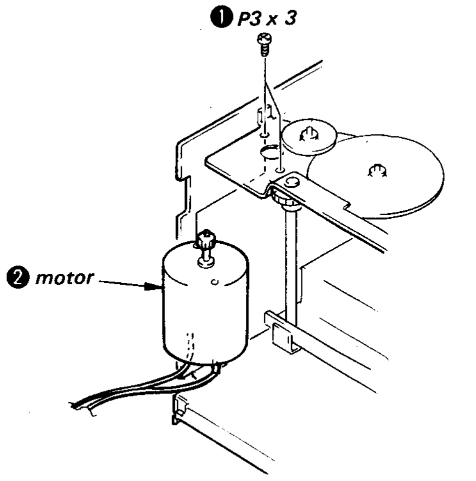
MOTOR (FOR PACK EJECT AND LINEAR SLIDE LEVER)


❶ P2 x 3
❷ motor

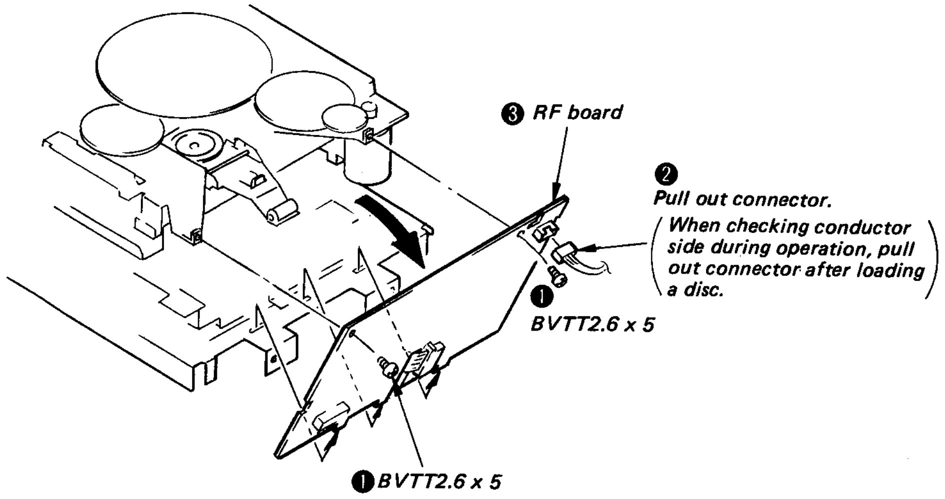
UPPER CHASSIS


❶ BV3 x 6
❶ BV3 x 6
❶ BV3 x 6
❺ Remove upper chassis.
❶ BV3 x 6
❸ Remove escutcheon.
❶ BV3 x 6
❷ Pull out connector.
❹ When removing upper chassis, put connector in the direction of arrow.

M3 MOTOR (FOR ELEVATOR)

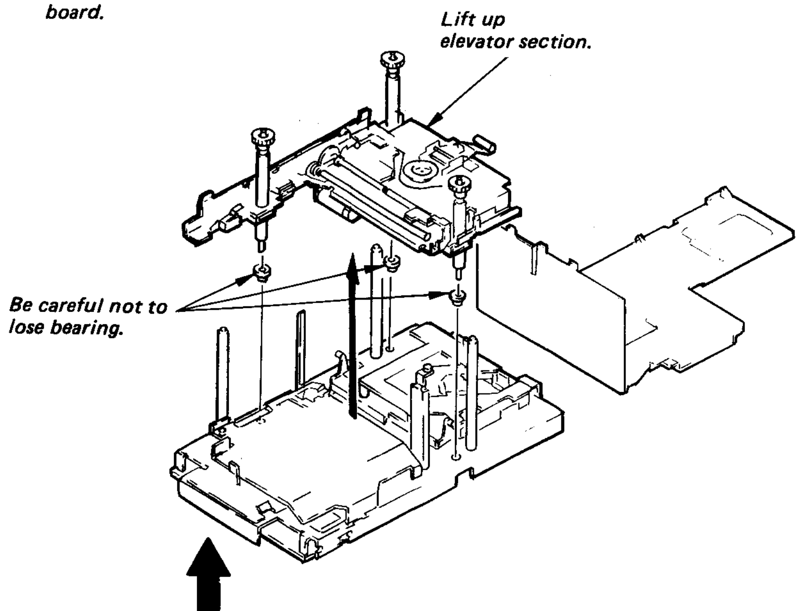

❶ P3 x 3
❷ motor

RF BOARD

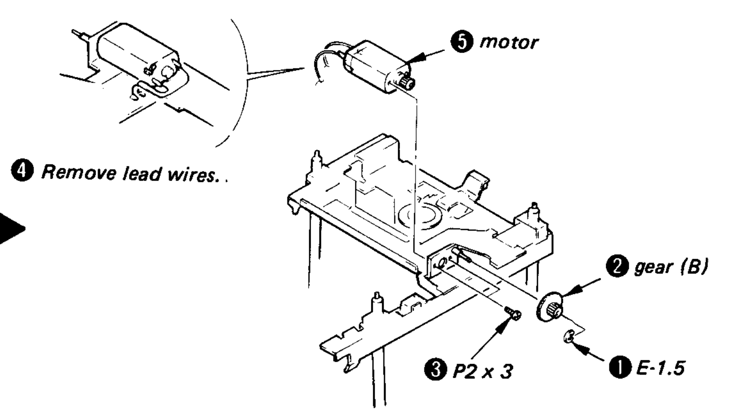

❸ RF board
❷
Pull out connector.
(When checking conductor side during operation, pull out connector after loading a disc.)
❶
BVTT2.6 x 5
❶ BVTT2.6 x 5

ELEVATOR SECTION

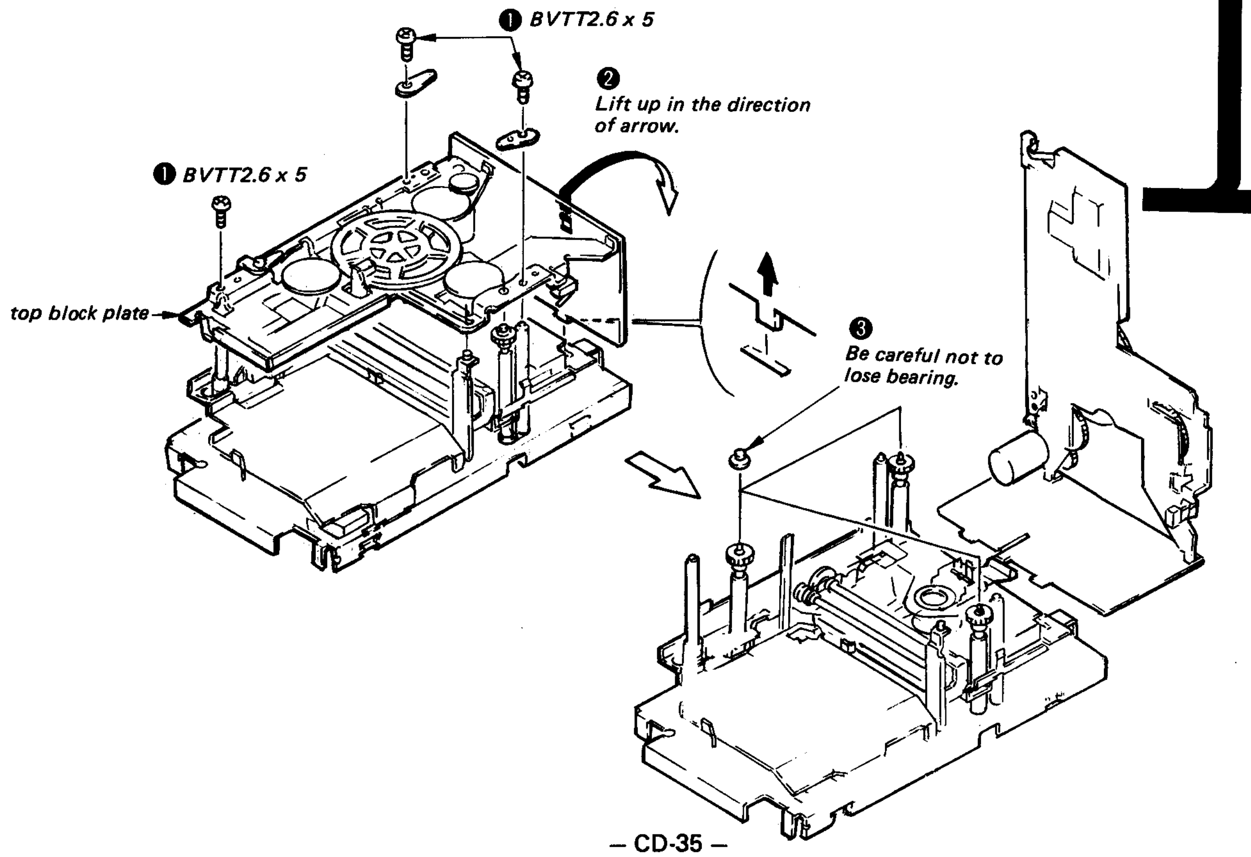
Remove the MD flexible board.


Lift up elevator section.
Be careful not to lose bearing.

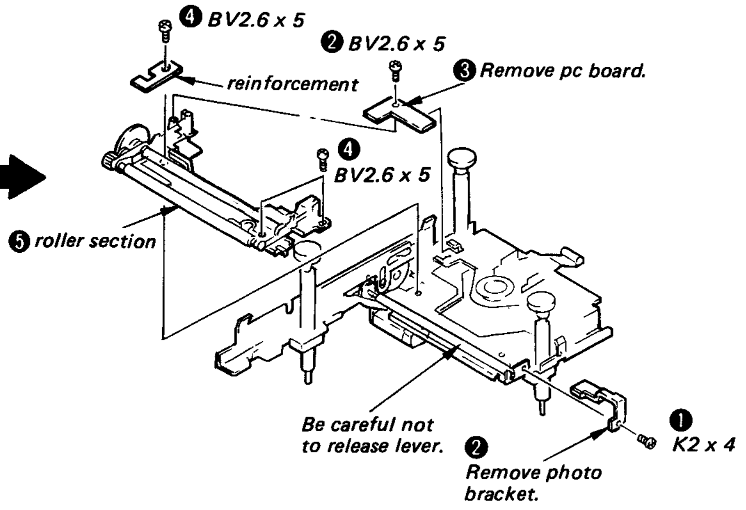
MOTOR (FOR LOAD AND SAVE)


❺ motor
❹ Remove lead wires.
❷ gear (B)
❸ P2 x 3
❶ E-1.5

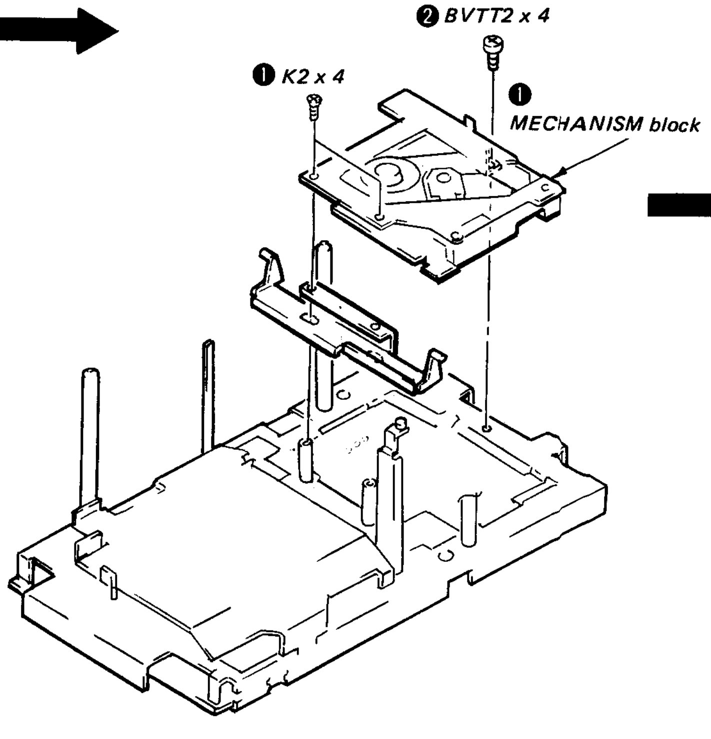
TOP BLOCK PLATE


❶ BVTT2.6 x 5
❷
Lift up in the direction of arrow.
❶ BVTT2.6 x 5
top block plate
❸
Be careful not to lose bearing.

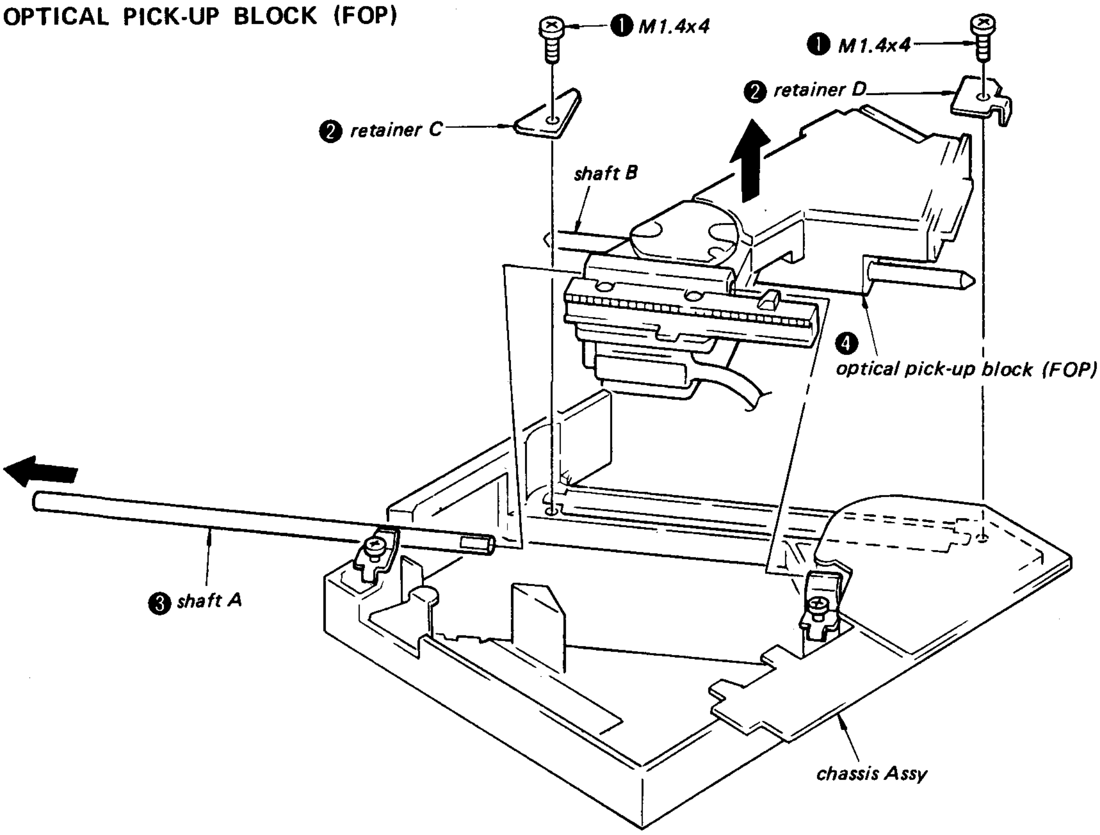
ROLLER SECTION


❹ BV2.6 x 5
❷ BV2.6 x 5
reinforcement
❸ Remove pc board.
❹
BV2.6 x 5
❺ roller section
Be careful not to release lever.
❷
Remove photo bracket.
❶
K2 x 4

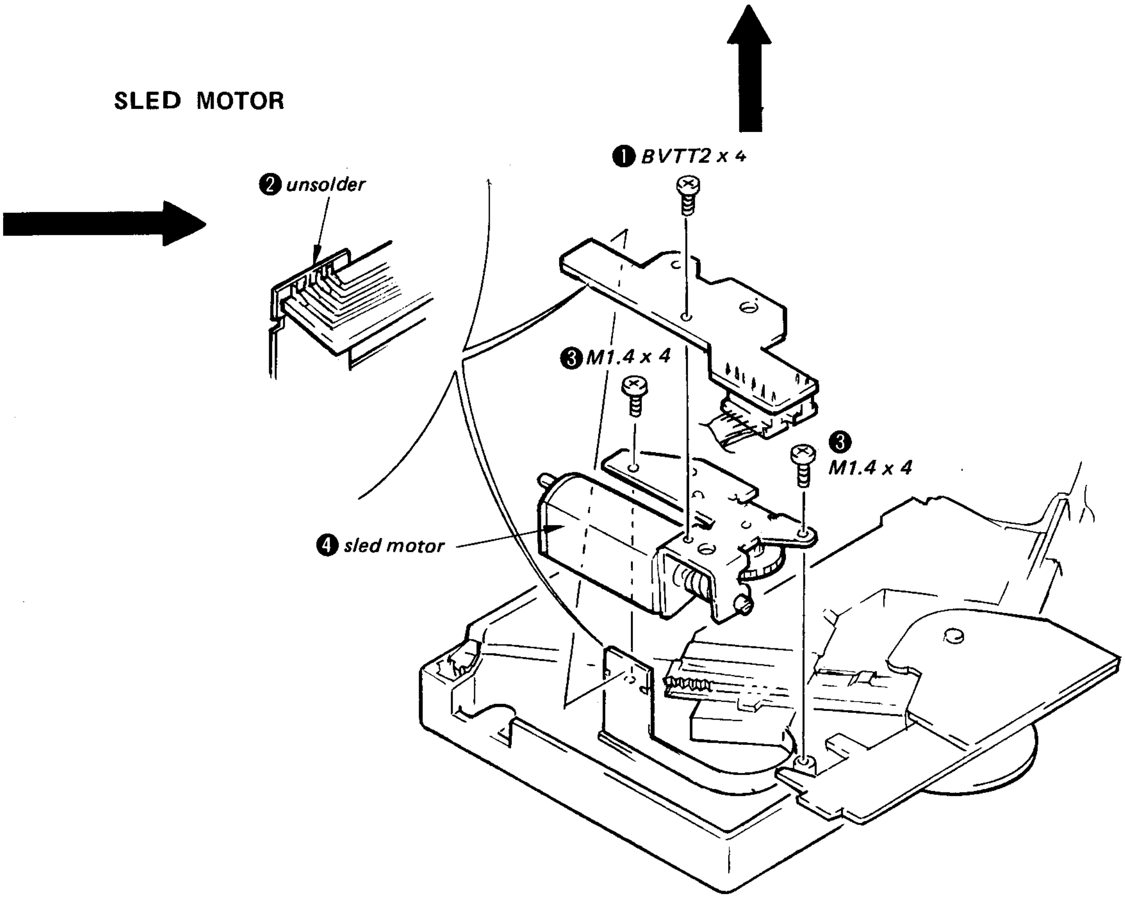
MECHANISM BLOCK


❷ BVTT2 x 4
❶ K2 x 4
❶
MECHANISM block

OPTICAL PICK-UP BLOCK (FOP)

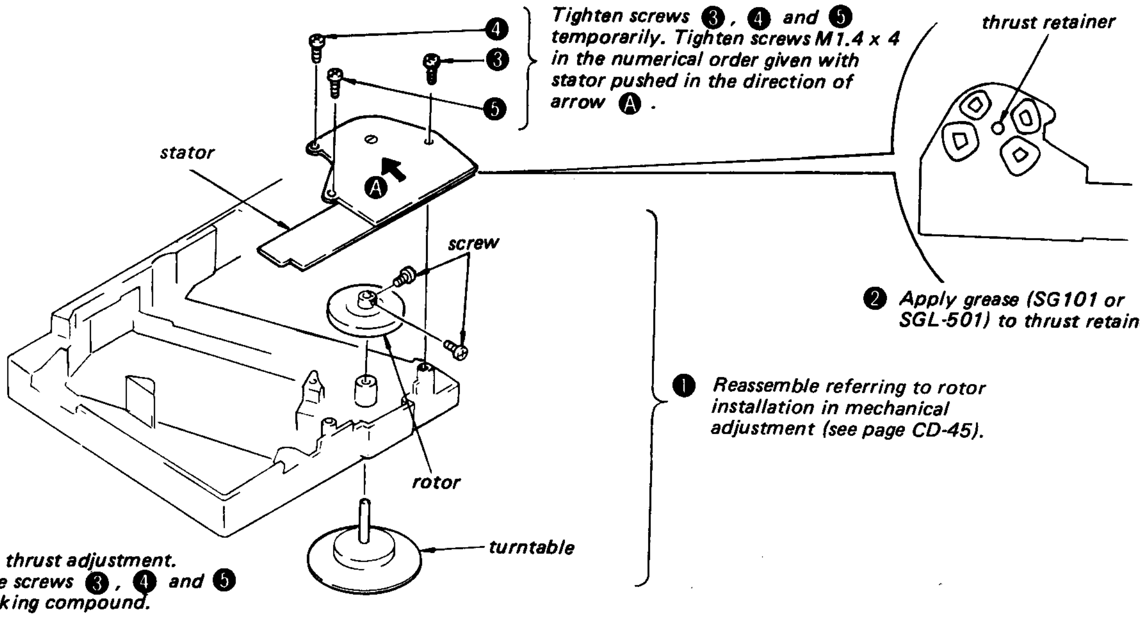

❶ M1.4x4
❶ M1.4x4
❷ retainer D
❷ retainer C
shaft B
❹ optical pick-up block (FOP)
❸ shaft A
chassis Assy

SLED MOTOR


❶ BVTT2 x 4
❷ unsolder
❸ M1.4 x 4
❸ M1.4 x 4
❹ sled motor

2-2. MECHANISM REASSEMBLY

ROTOR AND STATOR (DISC MOTOR)


❹
❸
❺
stator
Ⓐ
screw
rotor
turntable
thrust retainer

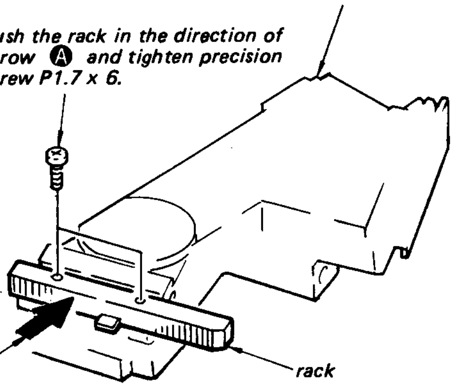
Tighten screws ❸, ❹ and ❺ temporarily. Tighten screws M1.4 x 4 in the numerical order given with stator pushed in the direction of arrow Ⓐ.

❷ *Apply grease (SG101 or SGL-501) to thrust retainer.*

❶ *Reassemble referring to rotor installation in mechanical adjustment (see page CD-45).*

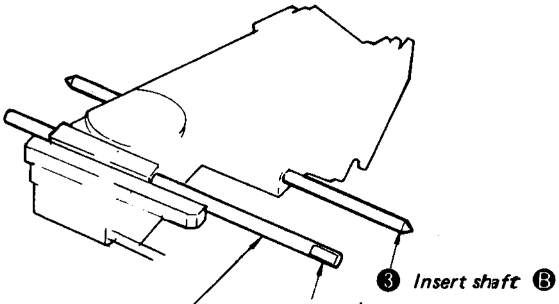
❻ *Perform thrust adjustment.*
❼ *Lock the screws ❸, ❹ and ❺ with locking compound.*

RACK AND SHAFT A, B


optical pick-up block (FOP)
rack
Ⓐ

❶ *Push the rack in the direction of arrow Ⓐ and tighten precision screw P1.7 x 6.*

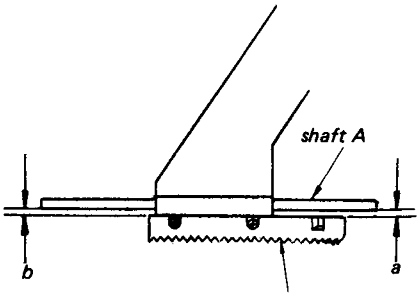
Ⓐ *(Push center portion of rack between two screws at a right angle against rack.)*


cut portion

❷ *Insert shaft Ⓐ (Be careful not to insert it from tip with cut portion.)*

❸ *Insert shaft Ⓑ*

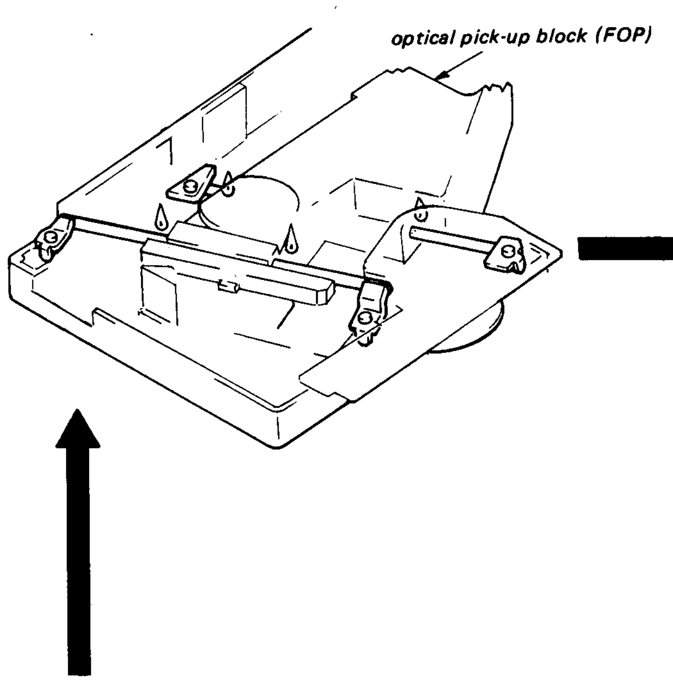
❹ *Confirm that a = b. If it does not, perform again from ❶.*


shaft A
b
a
rack

Refer to NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK (KSS-110E) on page CD-3.

LUBRICATION TO SHAFTS A, B

❶ *Apply a drop of hydro fluid EP-56 (part no. 7-661-018-01) to four portions marked 💧.*
❷ *Move FOP right and left two or three times to smooth them.*
❸ *Lift up the mechanism and incline it in the right or left direction. Confirm that FOP is moved smoothly with itself-weight.*

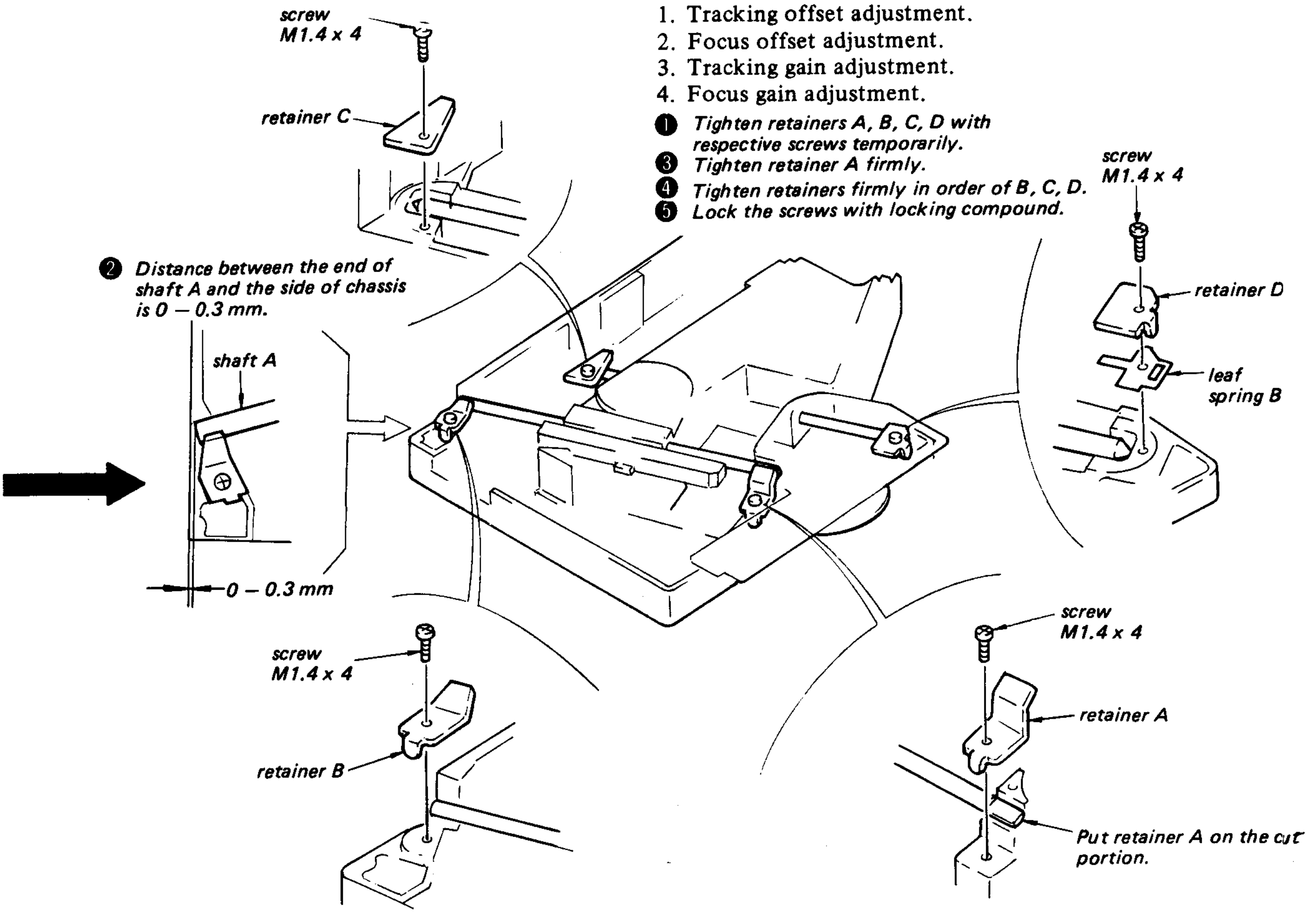

optical pick-up block (FOP)

OPTICAL PICK-UP BLOCK (FOP)

When replacing optical pick-up block, confirm and adjust the following items in the numerical order given.

1. Tracking offset adjustment.
2. Focus offset adjustment.
3. Tracking gain adjustment.
4. Focus gain adjustment.

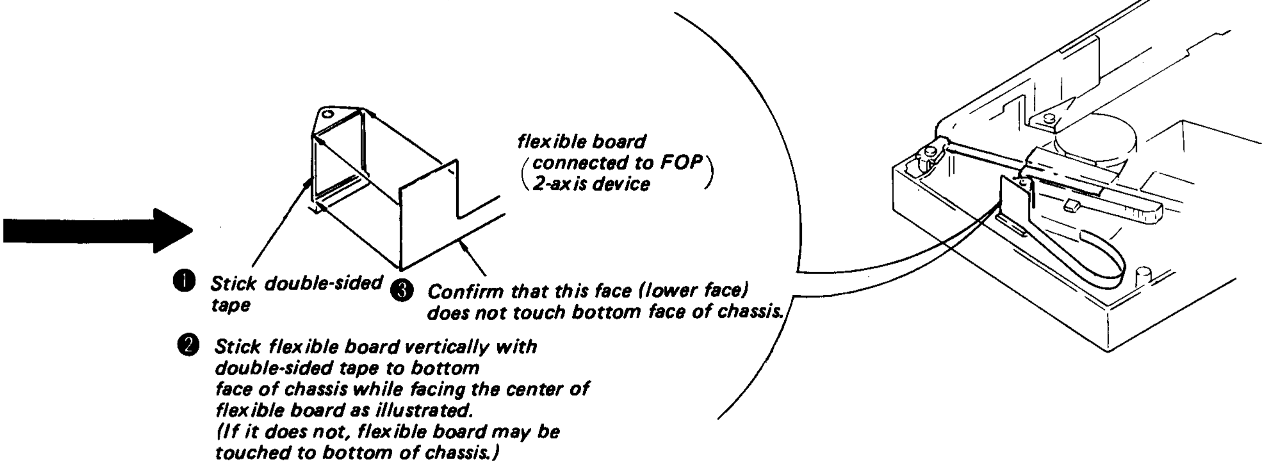
❶ *Tighten retainers A, B, C, D with respective screws temporarily.*
❸ *Tighten retainer A firmly.*
❹ *Tighten retainers firmly in order of B, C, D.*
❺ *Lock the screws with locking compound.*


screw
M1.4 x 4
retainer C
shaft A
0 – 0.3 mm
screw
M1.4 x 4
retainer D
leaf
spring B
screw
M1.4 x 4
retainer B
screw
M1.4 x 4
retainer A

❷ *Distance between the end of shaft A and the side of chassis is 0 – 0.3 mm.*

Put retainer A on the cut portion.

ATTACHMENT OF FLEXIBLE BOARD


flexible board (connected to FOP 2-axis device)

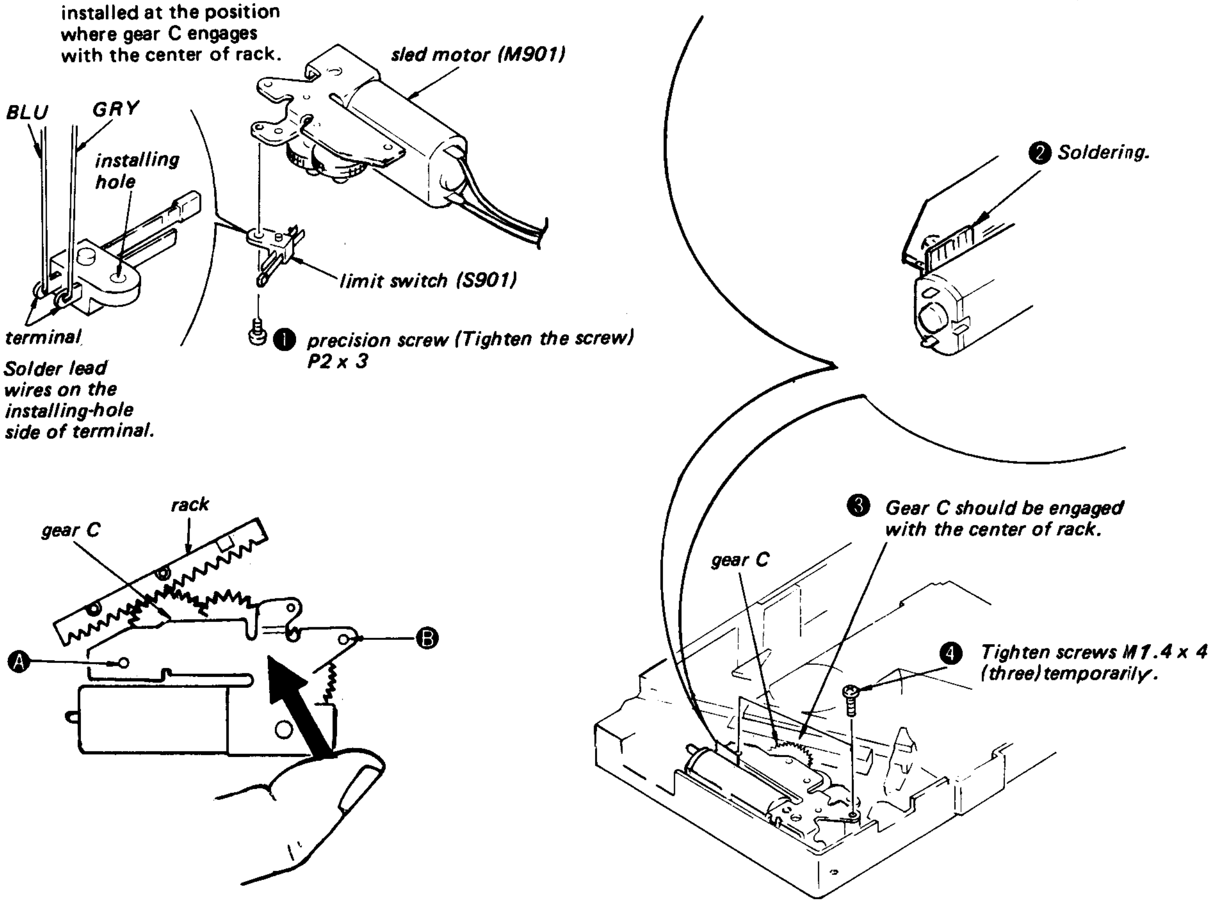
❶ *Stick double-sided tape*

❸ *Confirm that this face (lower face) does not touch bottom face of chassis.*

❷ *Stick flexible board vertically with double-sided tape to bottom face of chassis while facing the center of flexible board as illustrated.*
(If it does not, flexible board may be touched to bottom of chassis.)

SLED MOTOR

Note: Sled motor should be installed at the position where gear C engages with the center of rack.


sled motor (M901)
BLU
GRY
installing hole
limit switch (S901)
terminal
gear C
rack
Ⓐ
Ⓑ
gear C

Solder lead wires on the installing-hole side of terminal.

❶ *precision screw (Tighten the screw) P2 x 3*

❷ *Soldering.*

❸ *Gear C should be engaged with the center of rack.*

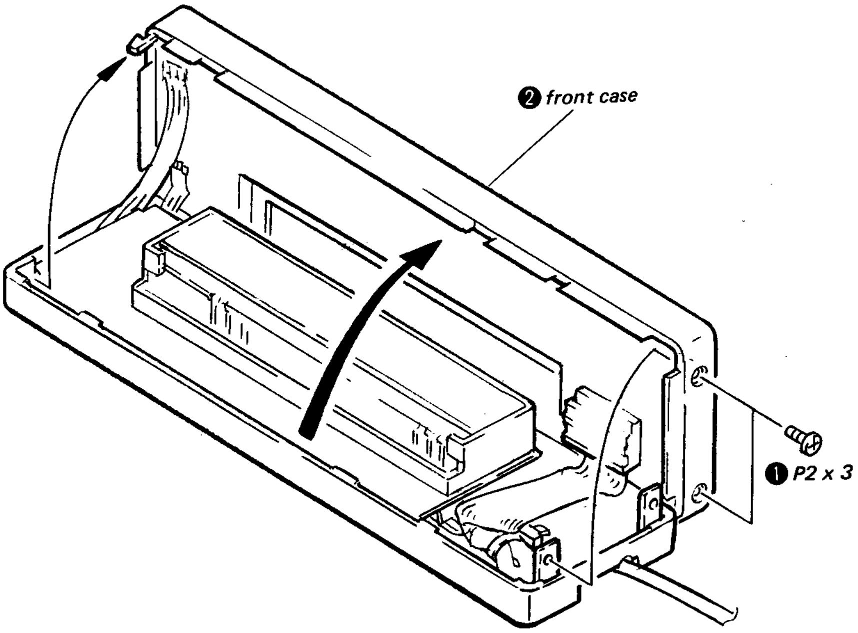
❹ *Tighten screws M1.4 x 4 (three) temporarily.*

❺ *Engage rack and gear Ⓒ and tighten screws Ⓐ and Ⓑ while pushing sled motor in the direction of arrow (at a right angle against rack) with about 300 g tension.*

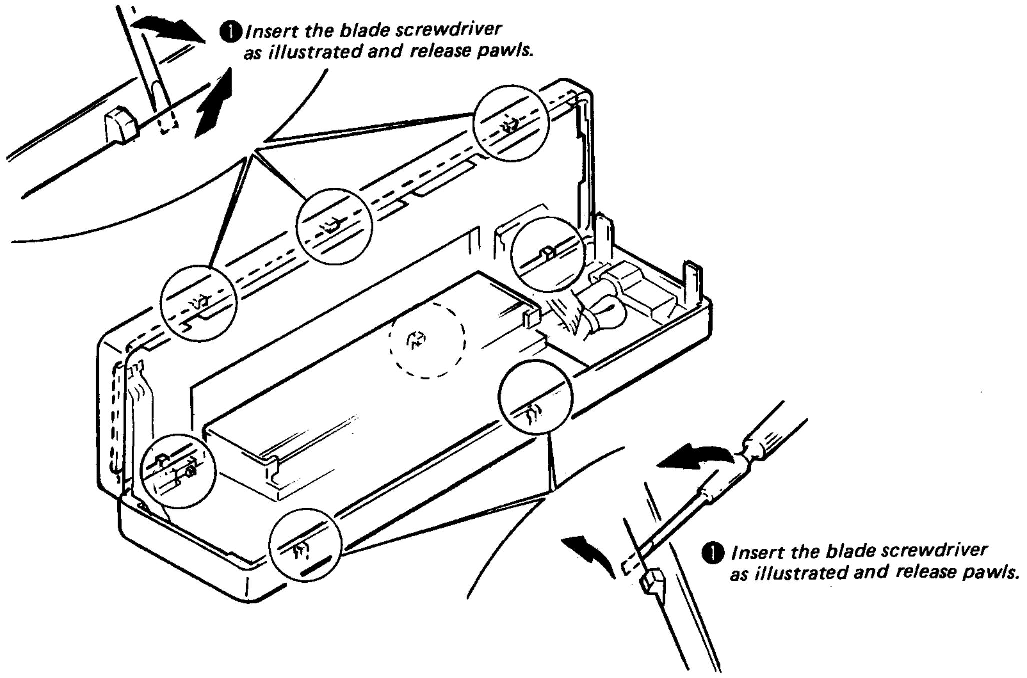
❻ *Check backlash. (See page CD-44.)*
❼ *Check sled motor response. (See page CD-44.)*
❽ *Apply locking compound to Ⓐ, Ⓑ.*

2-3. COMMANDER SECTION REMOVAL

FRONT CASE



PC BOARDS


❶ Insert the blade screwdriver as illustrated and release pawls.

❶ Insert the blade screwdriver as illustrated and release pawls.

SECTION 3
ADJUSTMENTS

3-1. MECHANICAL ADJUSTMENT

Home Adjustment

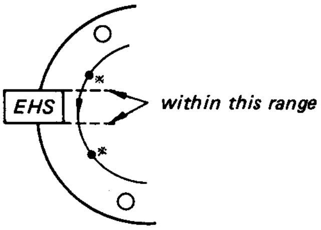
Perform this adjustment only when the following parts are replaced.

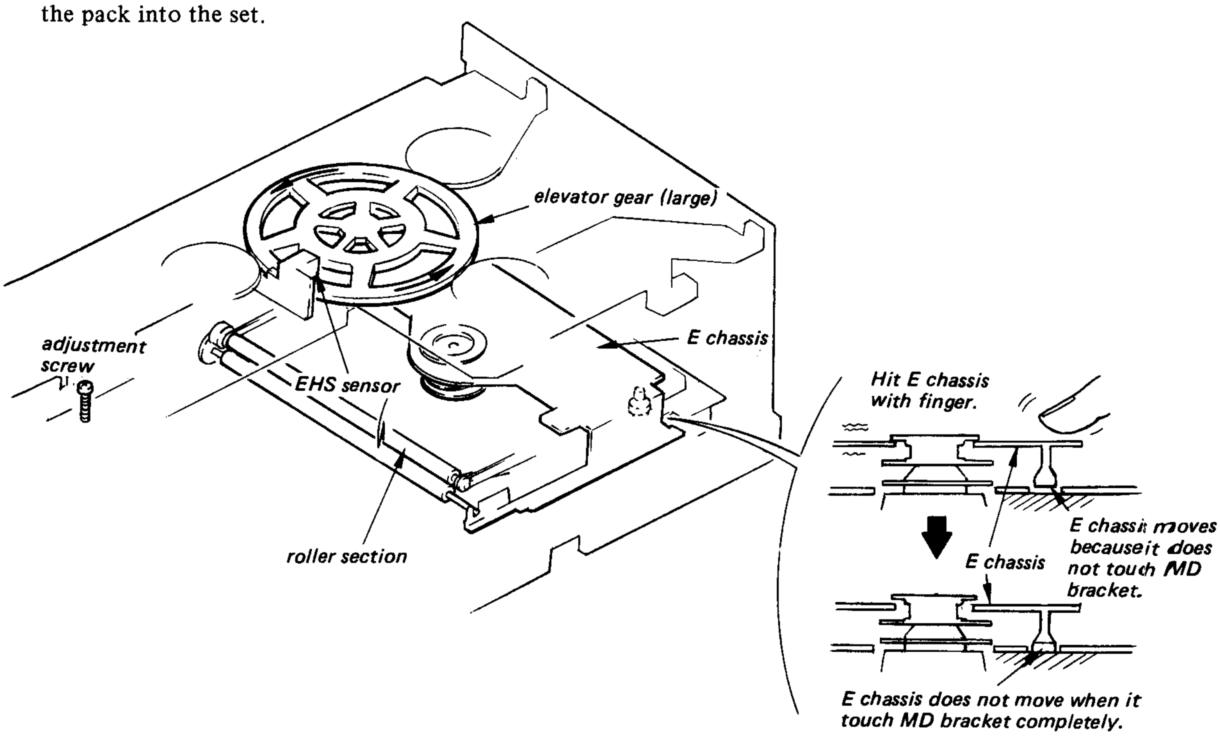
Elevator gear (large)
E chassis
Bottom chassis
Home switch

Preparations: Connect power supply and commander.

Procedure:

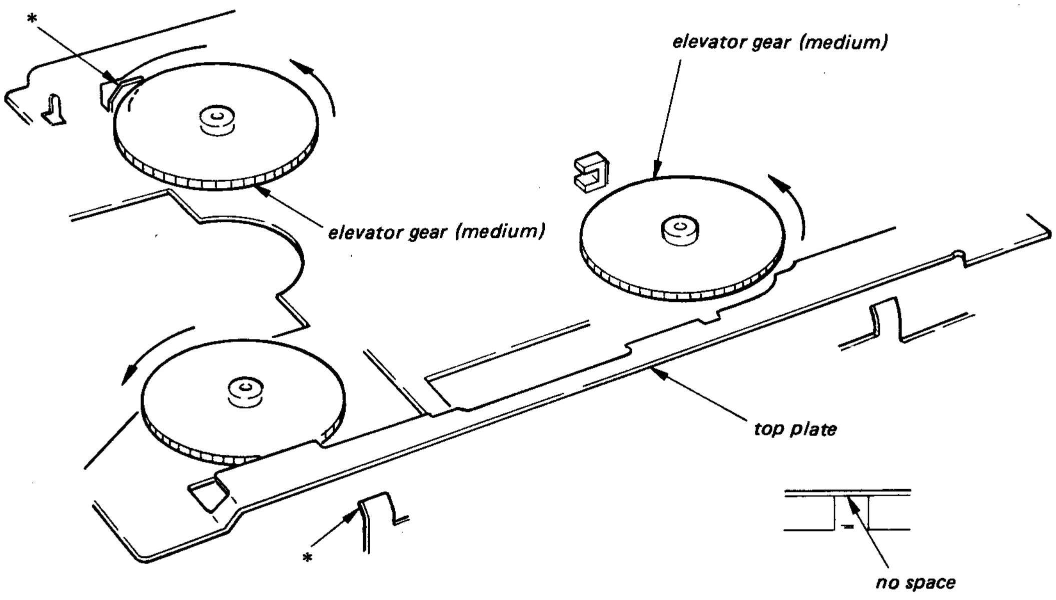
1. Raise the elevator.
2. Rotate the elevator gear (large) counterclockwise, and when the roller section starts to open, slowly continue to rotate the elevator gear (large) in the same direction and hit the E chassis with a finger as shown in the diagram.
3. If the E chassis is not in complete contact with the MD bracket, there will be a rattling noise. Continue to rotate the elevator gear (large) slowly until no sound is made.
4. Mark the elevator gear (large) for the point where the noise was no longer generated. (near EHS sensor center)
   Confirm that the marking is within the range marked ※ at this time.
5. Insert a disc into the first slot of pack and insert the pack into the set.
6. Press 1 and DISC and load the disc.
7. Confirm that the marking is within the EHS sensor range.
8. If not, turn the adjustment screw to adjust.
   When the adjustment screw is turned 1 rotation to the right, the elevator gear (large) moves 15 degrees to the right.
   When the adjustment screw is turned 1 rotation to the left, the elevator gear (large) moves 15 degrees to the left.
9. After adjustment, press 2 and DISC, then press 1 and DISC, and confirm that the marking is in the designated position.
10. After adjustment, lock the adjustemnt screw.


EHS
※
※
within this range

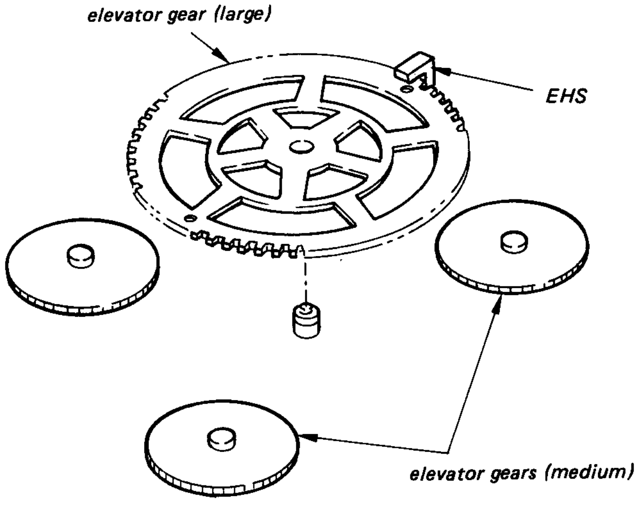

elevator gear (large)
E chassis
adjustment screw
EHS sensor
roller section
Hit E chassis with finger.
E chassis moves because it does not touch MD bracket.
E chassis
E chassis does not move when it touch MD bracket completely.

Elevator Gear (large) Adjustment

1. Turn the three elevator gears alternately in the direction of the arrows so that the section marked * and the top plate touch, with no space in between.


*
elevator gear (medium)
elevator gear (medium)
top plate
*
no space

2. Mount the elevator gear (large) so that the hole in it matches up with EHS, without letting the elevator gears (medium) rotate.


elevator gear (large)
EHS
elevator gears (medium)

Backlash Check

Measuring Locations:

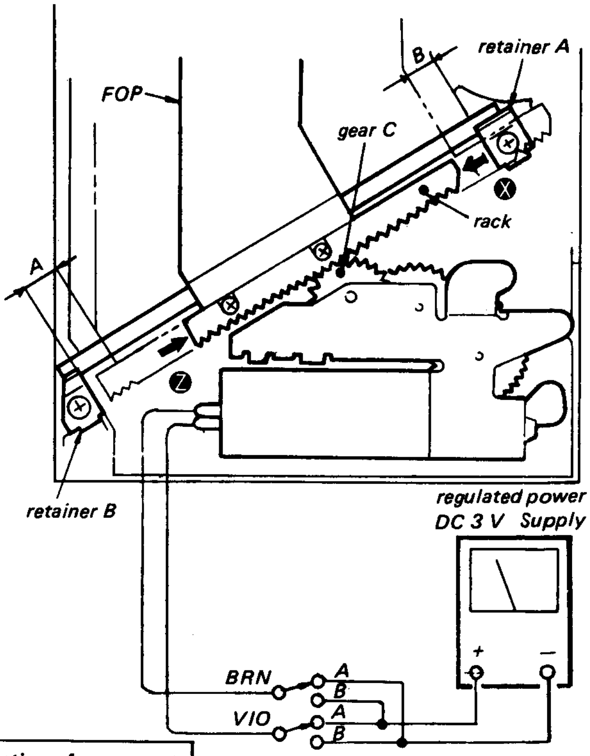
Outer circumference: Location where dimension A in the figure at right (space between FOP and press plate B) is 3-5 mm.

Middle: Location where gear C engagement point is at the center of the rack.

Inner circumference: Where dimension B at right (space between FOP and retainer A) is 3-5 mm.

Measuring Procedure:

1. Apply 3 V to sled motor lead and move the FOP to the measuring location. (Refer to figure).
2. At each measuring location, check that there is no movement in the directions of the arrows marked Ⓧ and Ⓩ when 50 g (2 oz) is applied to a fan-shaped tension gauge.
3. If there is movement, sled motor mounting should be redone. (Sled Motor Assembly.)



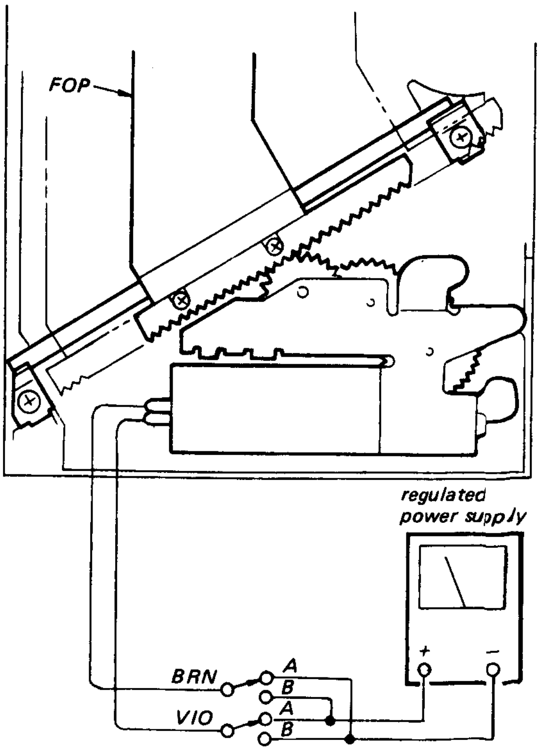
Switch position	Direction of movement	Switch position	Direction of movement
side A	inner to outer circumference	side B	outer to inner circumference

Sled Motor Response Check

If the following check is not satisfied, replace the sled motor (M901).

- **Minimum Activation Voltage Check.**
  1. Apply 1.5 V and check that the FOP moves smoothly from the inner to the outer circumference.
  2. Next apply 2 V and check that the FOP moves smoothly from the outer to the inner circumference.
- **Sled Sending Current Check**
  1. Apply 3 V and move the FOP from the innermost to the outermost circumference. Check that current value is less than 120 mA at this time.
  2. Next move the FOP from the outermost to the innermost circumference. Check that current value is less than 150 mA at this time.
- **Sled Sending Time Check**

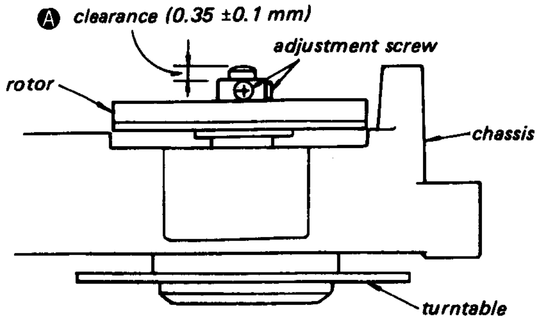
  Apply 3 V, and check that the time for the FOP to move from the innermost to the outermost circumference and from the outermost to the innermost circumference is less than 5 seconds each.



Switch position	Direction of movement	Switch position	Direction of movement
side A	inner to outer circumference	side B	outer to inner circumference

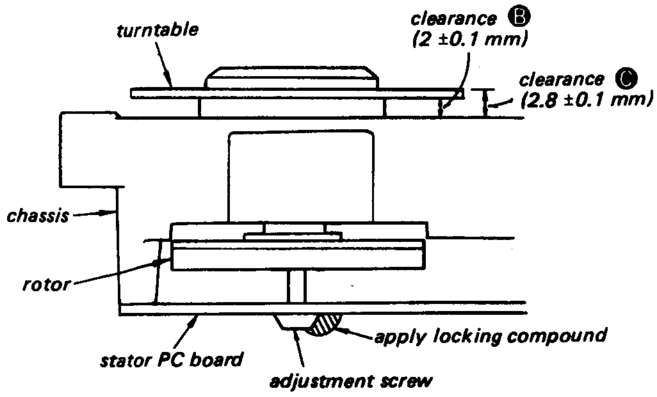
Rotor Mounting, Thrust Adjustment

- **Rotor Mounting**


Ⓐ clearance (0.35 ±0.1 mm)
adjustment screw
rotor
chassis
turntable

Mount the rotor on the turntable shaft so that the clearance Ⓐ above is 0.35 ±0.1 mm.

- **Thrust Adjustment**


turntable
clearance Ⓑ (2 ±0.1 mm)
clearance Ⓒ (2.8 ±0.1 mm)
chassis
rotor
apply locking compound
stator PC board
adjustment screw

Adjust the adjustment screw so that clearance Ⓑ and Ⓒ above are as follows:

Ⓑ : 2 ±0.1 mm
Ⓒ : 2.8 ±0.1 mm

Apply locking compound after adjustment.

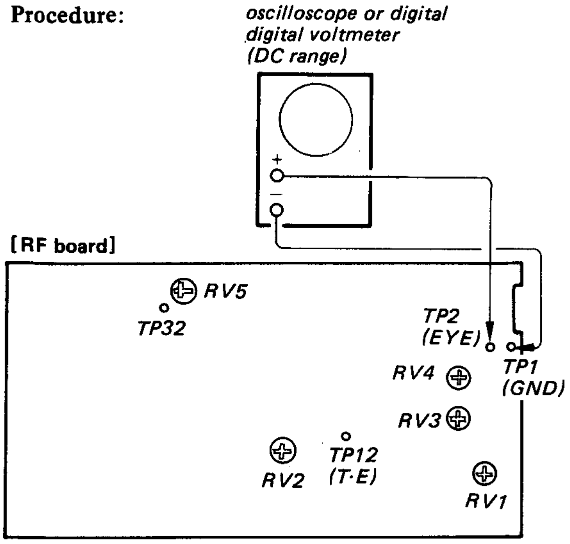
3-2. ELECTRICAL ADJUSTMENTS

Notes on Alignment

1. Make sure that the set is in a level position.
2. Use YEDS-1 disc for alignment.
3. Power supply voltage: 14.4 V dc

RF Offset Adjustment

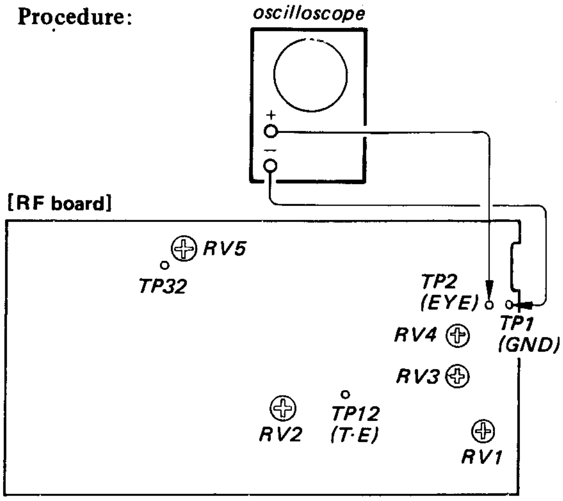
Procedure:


oscilloscope or digital
digital voltmeter
(DC range)
+
–
[RF board]
RV5
TP32
TP2
(EYE)
TP1
(GND)
RV4
RV3
TP12
(T·E)
RV2
RV1

1. Insert YEDS-1 into the first slot of pack, upside down.
2. Connect an oscilloscope or digital voltmeter to RF board test point TP2 (EYE) and TP1 (GND).
3. Load the disc and set for PLAY.
4. After step 3., the disc will be returned to the pack after several seconds. Adjust RV1 so that the value during those seconds is –100 ±10 mV. (Adjust for smallest level.)

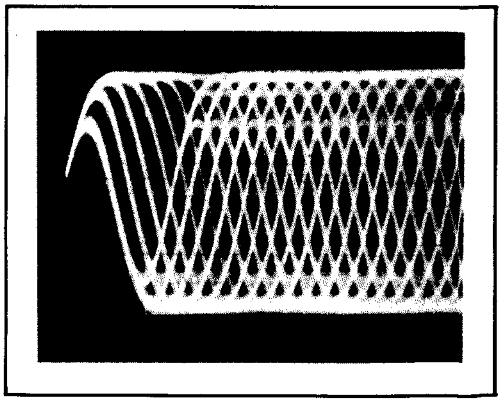
Focus Offset Adjustment

Procedure:


oscilloscope
+
–
[RF board]
RV5
TP32
TP2
(EYE)
TP1
(GND)
RV4
RV3
TP12
(T·E)
RV2
RV1

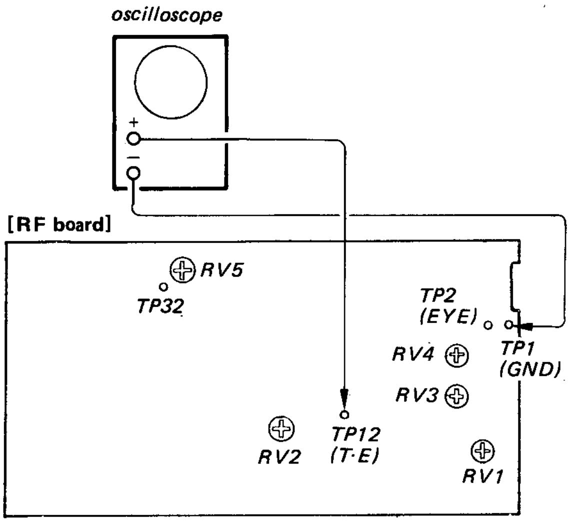
1. Connect the oscilloscope to test point TP32 (EYE) and TP1 (GND).
2. Load the disc and set to PLAY.
3. Adjust RV3 so that the oscilloscope waveform (eye pattern) is clear, and so that amplitude is maximum.

Volt/Div: 200 mV
Time/Div: 0.5 μsec



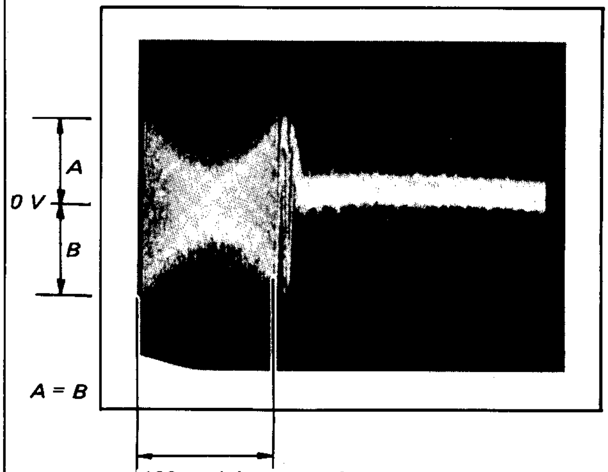
Tracking Offset Adjustment (rough adjustment)

Procedure:


oscilloscope
+
−
[RF board]
RV5
TP32
TP2
(EYE)
RV4
TP1
(GND)
RV3
RV2
TP12
(T·E)
RV1

1. Connect oscilloscope to test point TP12 (T·E) and TP1 (GND).
2. Load the disc and set to PLAY.
3. Press 9 , 0 , ····· SCAN + ▷▷| bttons and jump 90 tracks.
4. Observe the 100 track jump waveform at this time.
5. Adjust RV2 sot that the 100 track jump waveform is symmetrical with 0 V as the center.
6. When adjustment does not work, press 1 and |◁◁ – SCAN ····· buttons for 1 track jump, then repeat steps 4 and 5.

Volt/Div: 1 V
Time/Div: 2 msec
center 0 V



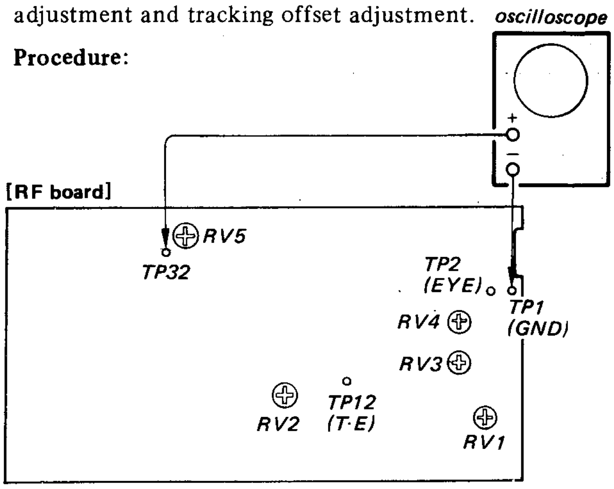
100 track jump waveform

Tracking Gain Adjustment

This adjustment normally does not need to be done, but perform when the following parts are replaced:
FOP, RV5

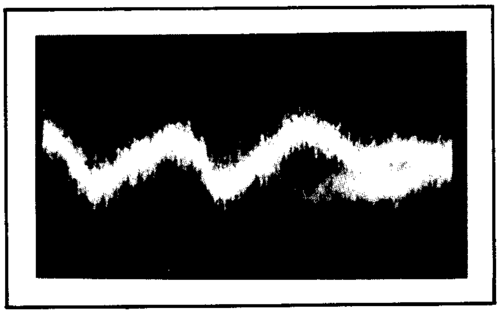
Perform this adjustment after completing focus offset adjustment and tracking offset adjustment.

Procedure:

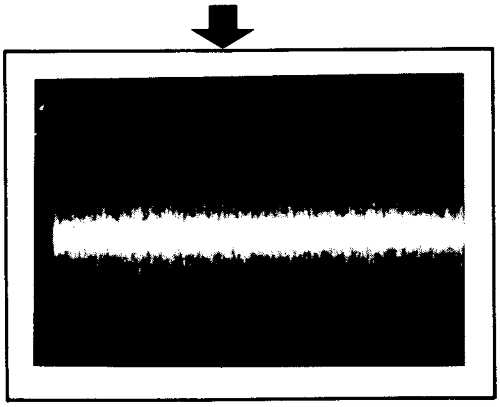

oscilloscope
+
−
[RF board]
RV5
TP32
TP2
(EYE)
RV4
TP1
(GND)
RV3
RV2
TP12
(T·E)
RV1

1. Connect the oscilloscope to test point TP32 and TP1 (GND).
2. Load the disc and set to PLAY.
3. Observe the oscilloscope waveform while turning RV5 clockwise. Adjust RV5 to the point where the waveform stops waving.

Volt/Div: 1 V
Time/Div: 2 msec



waveform waving



smooth

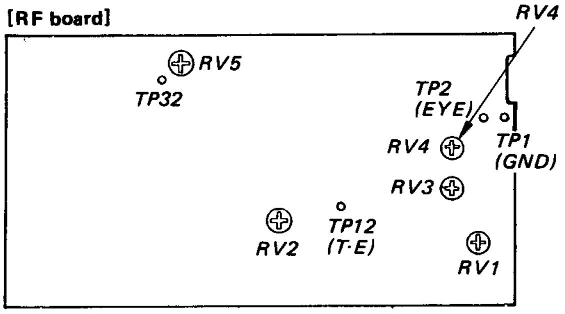
Focus Gain Adjustment (rough adjustment)

This adjustment normally does not need to be done, but should be performed when the following parts are replaced:

FOP, RV4

Procedure:

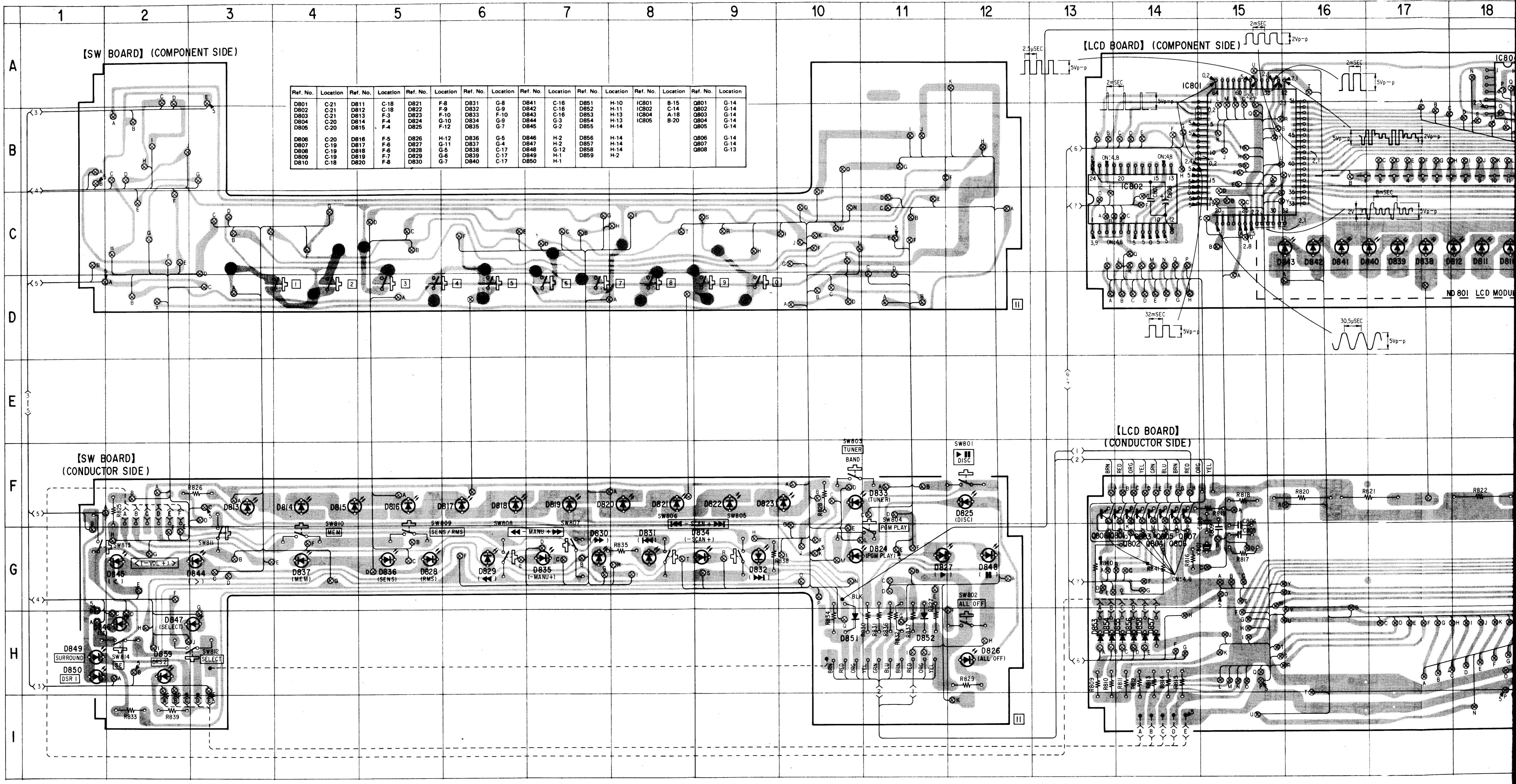
1. Set RV4 to mechanical center.
2. Confirm that there is not an abnormal amount of operational noise (like white noise) being emitted from the FOP lens section.
   If there is, turn RV4 slightly counterclockwise.


[RF board]
RV4
RV5
TP32
TP2
(EYE)
RV4
TP1
(GND)
RV3
RV2
TP12
(T-E)
RV1

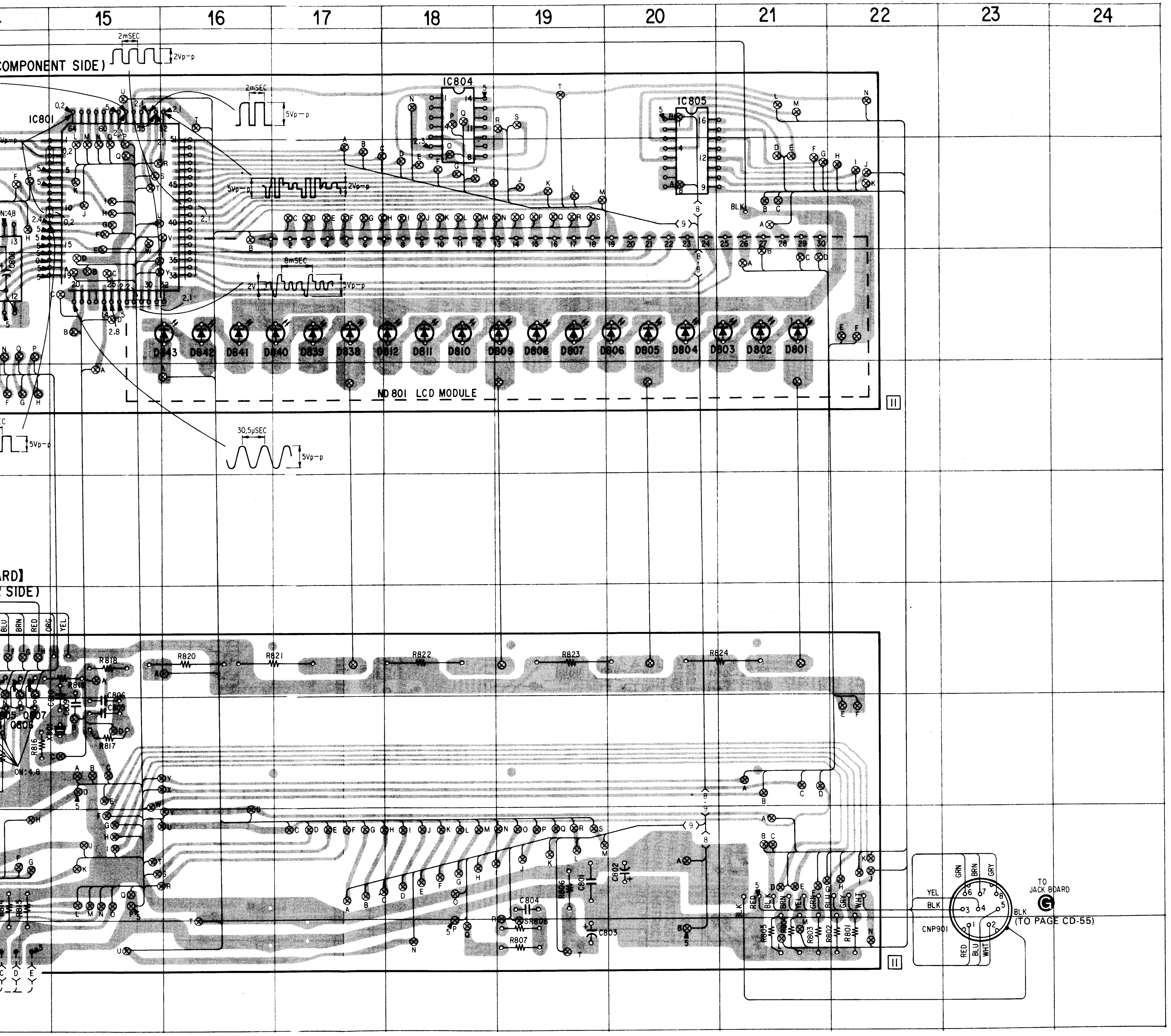
SECTION 4
DIAGRAMS

4-1. MOUNTING DIAGRAM – for Commander Section –

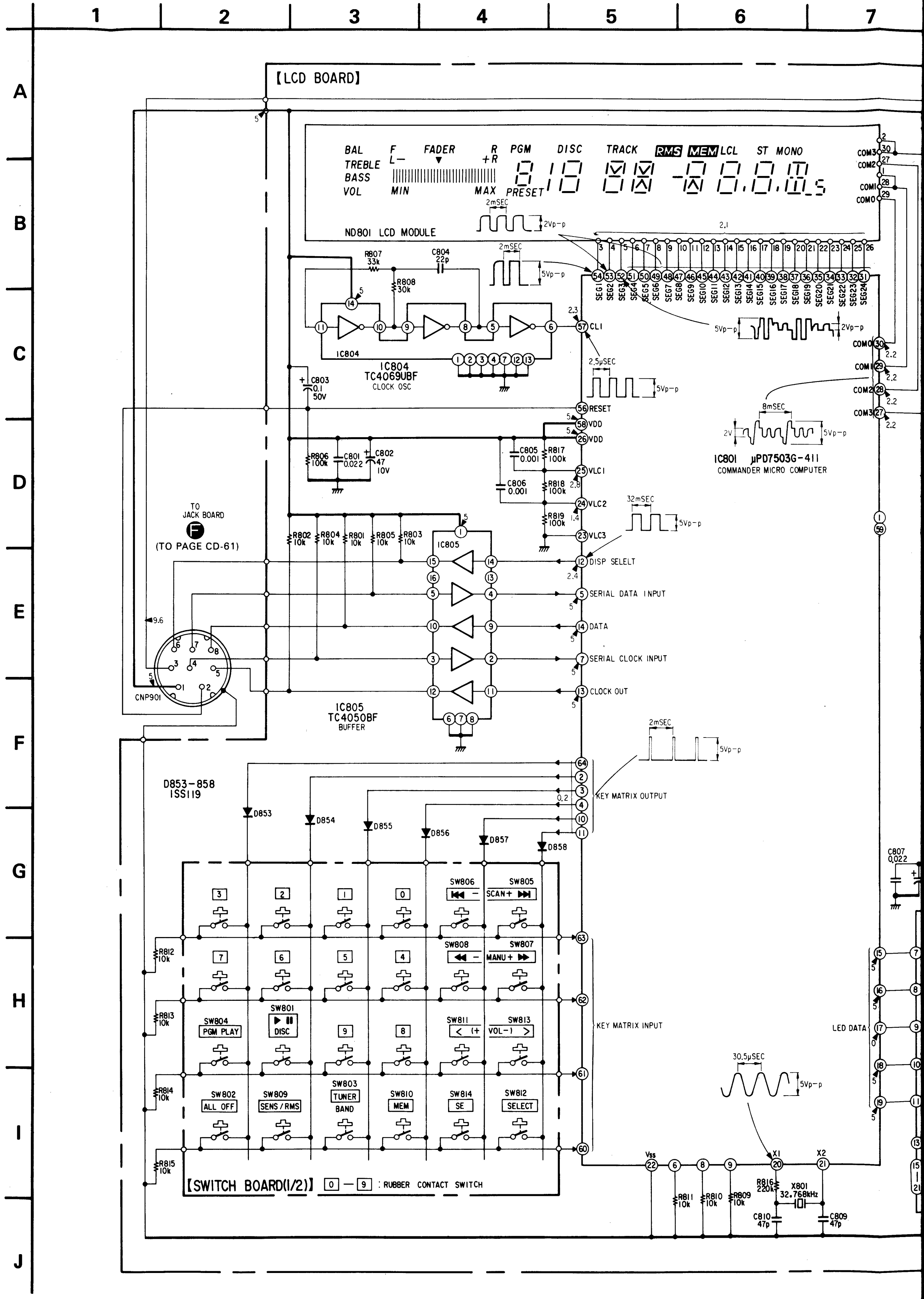
- See page CD-66 for Semiconductor Lead Layouts.

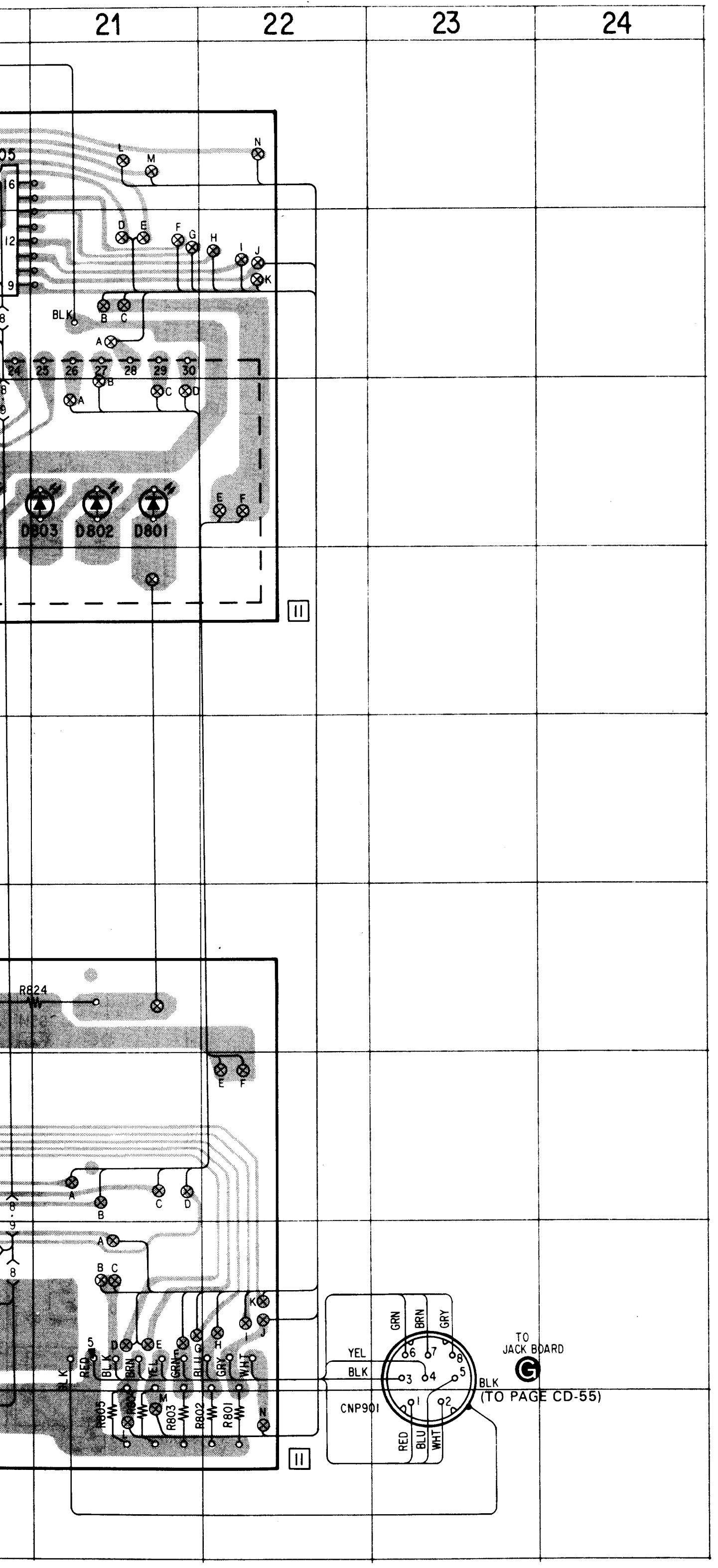

【SW BOARD】 (COMPONENT SIDE)
【LCD BOARD】 (COMPONENT SIDE)
【SW BOARD】 (CONDUCTOR SIDE)
【LCD BOARD】 (CONDUCTOR SIDE)
IC801
IC802
ND 801 LCD MODULE
2.5μSEC
5Vp-p
2mSEC
2Vp-p
8mSEC
32mSEC
30.5μSEC
SW803 TUNER BAND
SW801 ▶II DISC
SW804 PGM PLAY
SW802 ALL OFF
SW805
SW806
SW807
SW808 ◀◀ MANU + ▶▶
SW809 SENS / RMS
SW810 MEM
SW811
SW812 SELECT
SW813
SW814 DSR
D833 (TUNER)
D824 (PGM PLAY)
D825 (DISC)
D826 (ALL OFF)
D827 (▶)
D848 (■)
D834 (– SCAN +)
D835 (– MANU +)
D836 (SENS)
D837 (MEM)
D828 (RMS)
D829 (◀◀)
D830 (▶▶)
D831 (I◀◀)
D832 (▶▶I)
D844
D845
D847 (SELECT)
D849 SURROUND
D850 DSR I
D859 DRS 2
D851
D852
< – VOL + >
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18
A B C D E F G H I

Ref. No.	Location	Ref. No.	Location	Ref. No.	Location	Ref. No.	Location	Ref. No.	Location	Ref. No.	Location	Ref. No.	Location	Ref. No.	Location
D801	C-21	D811	C-18	D821	F-8	D831	G-8	D841	C-16	D851	H-10	IC801	B-15	Q801	G-14
D802	C-21	D812	C-18	D822	F-9	D832	G-9	D842	C-16	D852	H-11	IC802	C-14	Q802	G-14
D803	C-21	D813	F-3	D823	F-10	D833	F-10	D843	C-16	D853	H-13	IC804	A-18	Q803	G-14
D804	C-20	D814	F-4	D824	G-10	D834	G-9	D844	G-3	D854	H-13	IC805	B-20	Q804	G-14
D805	C-20	D815	F-4	D825	F-12	D835	G-7	D845	G-2	D855	H-14			Q805	G-14
D806	C-20	D816	F-5	D826	H-12	D836	G-5	D846	H-2	D856	H-14			Q806	G-14
D807	C-19	D817	F-6	D827	G-11	D837	G-4	D847	H-2	D857	H-14			Q807	G-14
D808	C-19	D818	F-6	D828	G-5	D838	C-17	D848	G-12	D858	H-14			Q808	G-13
D809	C-19	D819	F-7	D829	G-6	D839	C-17	D849	H-1	D859	H-2				
D810	C-18	D820	F-8	D830	G-7	D840	C-17	D850	H-1						

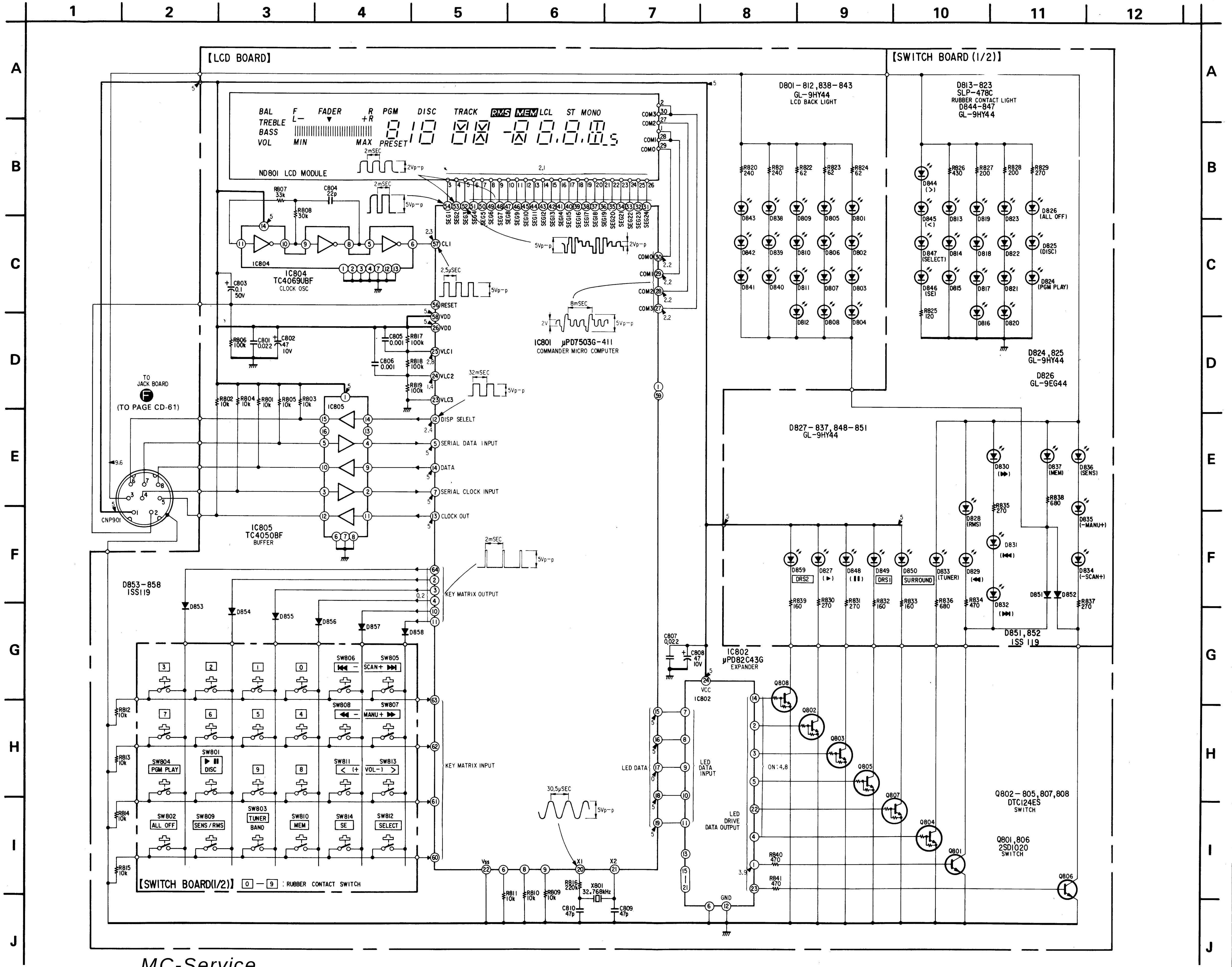

COMPONENT SIDE)
IC801
IC804
IC805
ND801 LCD MODULE
D801
D802
D803
D804
D805
D806
D807
D808
D809
D810
D811
D812
D838
D839
D840
D841
D842
D843
R816
R817
R818
R820
R821
R822
R823
R824
C801
C802
C803
C804
C806
R801
R802
R803
R804
R805
R806
R807
R808
2mSEC
2Vp-p
5Vp-p
8mSEC
30.5μSEC
ARD]
SIDE)
BLU
BRN
RED
ORG
YEL
GRN
GRY
WHT
BLK
CNP901
TO JACK BOARD
G
(TO PAGE CD-55)

4-2. SCHEMATIC DIAGRAM – for Commander Section –


[LCD BOARD]
BAL
TREBLE
BASS
VOL
FADER
PGM
DISC
TRACK
RMS
MEM
LCL
ST MONO
MIN
MAX
PRESET
ND801 LCD MODULE
COM3
COM2
COM1
COM0
R807 33k
C804 22p
R808 30k
IC804 TC4069UBF CLOCK OSC
C803 0.1 50V
R806 100k
C801 0.022
C802 47 10V
C805 0.001
R817 100k
C806 0.001
R818 100k
R819 100k
RESET
VDD
VLC1
VLC2
VLC3
CL1
IC801 μPD7503G-411 COMMANDER MICRO COMPUTER
TO JACK BOARD
F
(TO PAGE CD-61)
R802 10k
R804 10k
R801 10k
R805 10k
R803 10k
IC805 TC4050BF BUFFER
DISP SELELT
SERIAL DATA INPUT
DATA
SERIAL CLOCK INPUT
CLOCK OUT
CNP901
D853–858 ISS119
D853
D854
D855
D856
D857
D858
KEY MATRIX OUTPUT
KEY MATRIX INPUT
SW806
SW805
SCAN+
SW808
SW807
MANU+
SW804 PGM PLAY
SW801 DISC
SW811
SW813 VOL–
SW802 ALL OFF
SW809 SENS/RMS
SW803 TUNER BAND
SW810 MEM
SW814 SE
SW812 SELECT
R812 10k
R813 10k
R814 10k
R815 10k
[SWITCH BOARD(1/2)] 0 – 9 : RUBBER CONTACT SWITCH
Vss
X1
X2
R811 10k
R810 10k
R809 10k
R816 220k
X801 32.768kHz
C810 47p
C809 47p
C807 0.022
LED DATA
2mSEC
2Vp-p
5Vp-p
2.5μSEC
8mSEC
32mSEC
30.5μSEC

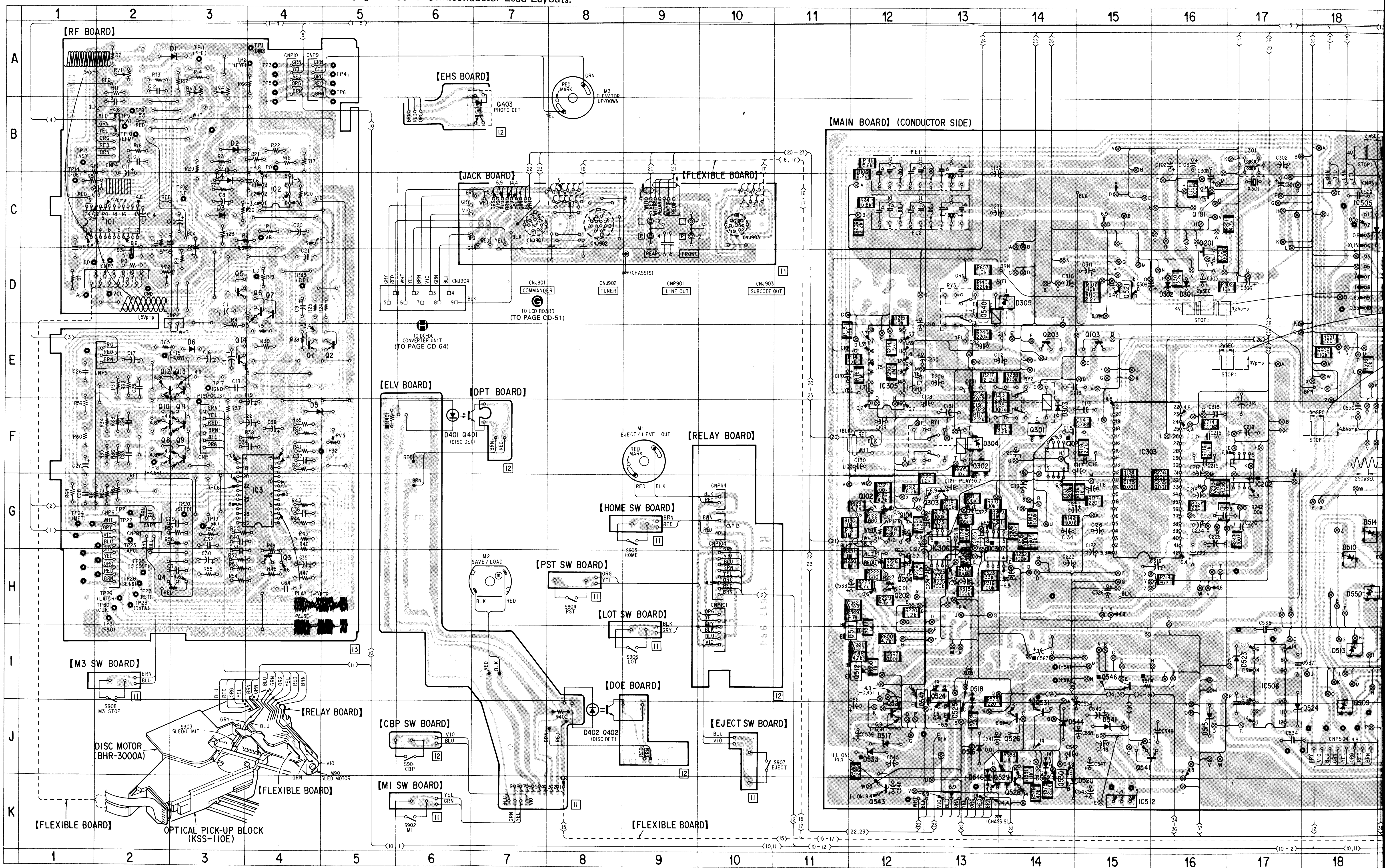

21
22
23
24
D803
D802
D801
R824
CNP901
YEL
BLK
GRN
GRY
RED
BLU
WHT
TO JACK BOARD
G
(TO PAGE CD-55)
II

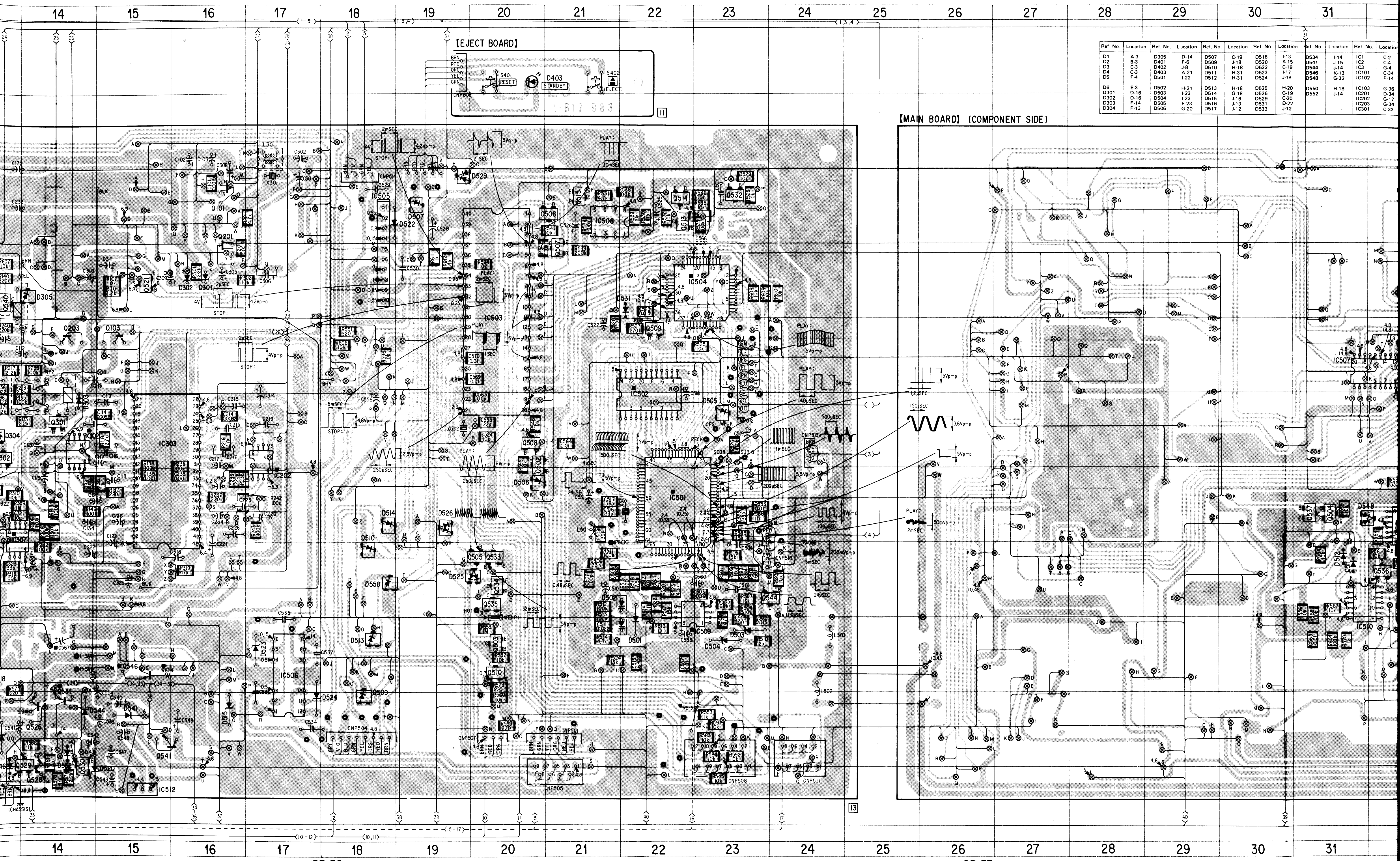
4-2. SCHEMATIC DIAGRAM — for Commander Section —


1
2
3
4
5
6
7
8
9
10
11
12
A
B
C
D
E
F
G
H
I
J
[LCD BOARD]
[SWITCH BOARD (1/2)]
ND801 LCD MODULE
BAL
TREBLE
BASS
VOL
F L−
FADER
R +R
MIN
MAX
PGM
PRESET
DISC
TRACK
RMS
MEM
LCL
ST MONO
COM3
COM2
COM1
COM0
IC804
TC4069UBF
CLOCK OSC
R807 33k
C804 22p
R808 30k
C803 0.1 50V
R806 100k
C801 0.022
C802 47 10V
C805 0.001
C806 0.001
R817 100k
R818 100k
R819 100k
RESET
VDD
VLC1
VLC2
VLC3
DISP SELELT
SERIAL DATA INPUT
DATA
SERIAL CLOCK INPUT
CLOCK OUT
CL1
IC801 μPD7503G-411
COMMANDER MICRO COMPUTER
2mSEC
2.5μSEC
8mSEC
32mSEC
5Vp-p
2Vp-p
TO JACK BOARD
F
(TO PAGE CD-61)
R802 10k
R804 10k
R801 10k
R805 10k
R803 10k
IC805
TC4050BF
BUFFER
CNP901
KEY MATRIX OUTPUT
KEY MATRIX INPUT
D853-858
ISS119
D853
D854
D855
D856
D857
D858
R812 10k
R813 10k
R814 10k
R815 10k
SW806
SW805
SCAN+
SW808
SW807
MANU+
SW804
PGM PLAY
SW801
DISC
SW811
SW813
VOL−
SW802
ALL OFF
SW809
SENS/RMS
SW803
TUNER
BAND
SW810
MEM
SW814
SE
SW812
SELECT
[SWITCH BOARD(1/2)]
0 — 9 : RUBBER CONTACT SWITCH
Vss
X1
X2
R811 10k
R810 10k
R809 10k
R816 220k
X801 32.768kHz
C810 47p
C809 47p
30.5μSEC
C807 0.022
C808 47 10V
IC802
μPD82C43G
EXPANDER
VCC
LED DATA
LED DATA INPUT
LED DRIVE DATA OUTPUT
GND
ON:4.8
D801-812,838-843
GL-9HY44
LCD BACK LIGHT
D813-823
SLP-478C
RUBBER CONTACT LIGHT
D844-847
GL-9HY44
R820 240
R821 240
R822 62
R823 62
R824 62
R825 120
R826 430
R827 200
R828 200
R829 270
D844 (>)
D845 (<)
D847 (SELECT)
D846 (SE)
D826 (ALL OFF)
D825 (DISC)
D824 (PGM PLAY)
D824,825
GL-9HY44
D826
GL-9EG44
D827-837,848-851
GL-9HY44
D830
D837 (MEM)
D836 (SENS)
D828 (RMS)
D835 (−MANU+)
D831
D834 (−SCAN+)
D829
D832
D859 DRS2
D827
D848
D849 DRS1
D850 SURROUND
D833 (TUNER)
D851
D852
R835 270
R838 680
R839 160
R830 270
R831 270
R832 160
R833 160
R836 680
R834 470
R837 270
D851,852
ISS 119
Q808
Q802
Q803
Q805
Q807
Q804
Q801
Q806
R840 470
R841 470
Q802-805,807,808
DTC124ES
SWITCH
Q801,806
2SD1020
SWITCH

4-3. MOUNTING DIAGRAM — for Main Section —

• See page CD-66 for Semiconductor Lead Layouts.


[RF BOARD]
[EHS BOARD]
Q403 PHOTO DET
M3 ELEVATOR UP/DOWN
RED MARK
[JACK BOARD]
[FLEXIBLE BOARD]
CNJ901 COMMANDER
CNJ902 TUNER
CNP901 LINE OUT
CNJ903 SUBCODE OUT
(CHASSIS)
REAR
FRONT
TO LCD BOARD (TO PAGE CD-51)
TO DC-DC CONVERTER UNIT (TO PAGE CD-64)
[MAIN BOARD] (CONDUCTOR SIDE)
[ELV BOARD]
[DPT BOARD]
D401 Q401 (DISC DET)
M1 EJECT / LEVEL OUT
[RELAY BOARD]
[HOME SW BOARD]
S905 HOME
[PST SW BOARD]
S904 PST
[LOT SW BOARD]
S906 LOT
M2 SAVE / LOAD
[DOE BOARD]
D402 Q402 (DISC DET)
[EJECT SW BOARD]
S907 EJECT
[CBP SW BOARD]
S901 CBP
[M1 SW BOARD]
S902 M1
[M3 SW BOARD]
S908 M3 STOP
S903 SLED/LIMIT
DISC MOTOR (BHR-3000A)
M901 SLED MOTOR
[RELAY BOARD]
[FLEXIBLE BOARD]
[FLEXIBLE BOARD]
OPTICAL PICK-UP BLOCK (KSS-110E)
[FLEXIBLE BOARD]
IC1
IC2
IC3
IC202
IC303
IC305
IC306
IC307
IC505
IC506
IC512
STOP:
PLAY
PAUSE
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18
A B C D E F G H I J K

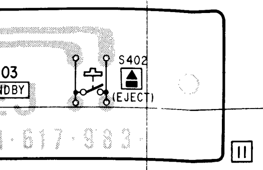

【EJECT BOARD】
S401 RESET
D403 STANDBY
S402 (EJECT)
CNP603
1-617-983-
【MAIN BOARD】 (COMPONENT SIDE)
IC501
IC502
IC503
IC504
IC505
IC506
IC508
IC510
IC512
IC202
IC303
IC507
CNP504
CNP505
CNP507
CNP508
CNP510
CNP511
CNP512
CNP513
CNP501
CNP514
PLAY:
STOP:
(CHASSIS)
14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

Ref. No.	Location	Ref. No.	Location	Ref. No.	Location	Ref. No.	Location	Ref. No.	Location	Ref. No.	Locatio
D1	A-3	D305	D-14	D507	C-19	D518	I-13	D534	I-14	IC1	C-2
D2	B-3	D401	F-6	D509	J-18	D520	K-15	D541	J-15	IC2	C-4
D3	C-3	D402	J-8	D510	H-18	D522	C-19	D544	J-14	IC3	G-4
D4	C-3	D403	A-21	D511	H-31	D523	I-17	D546	K-13	IC101	C-34
D5	F-4	D501	I-22	D512	H-31	D524	J-18	D548	G-32	IC102	F-14
D6	E-3	D502	H-21	D513	H-18	D525	H-20	D550	H-18	IC103	G-36
D301	D-16	D503	I-23	D514	G-18	D526	G-19	D552	J-14	IC201	D-34
D302	D-16	D504	I-23	D515	J-16	D529	C-20			IC202	G-17
D303	F-14	D505	F-23	D516	J-13	D531	D-22			IC203	G-34
D304	F-13	D506	G-20	D517	J-12	D533	J-12			IC301	C-33

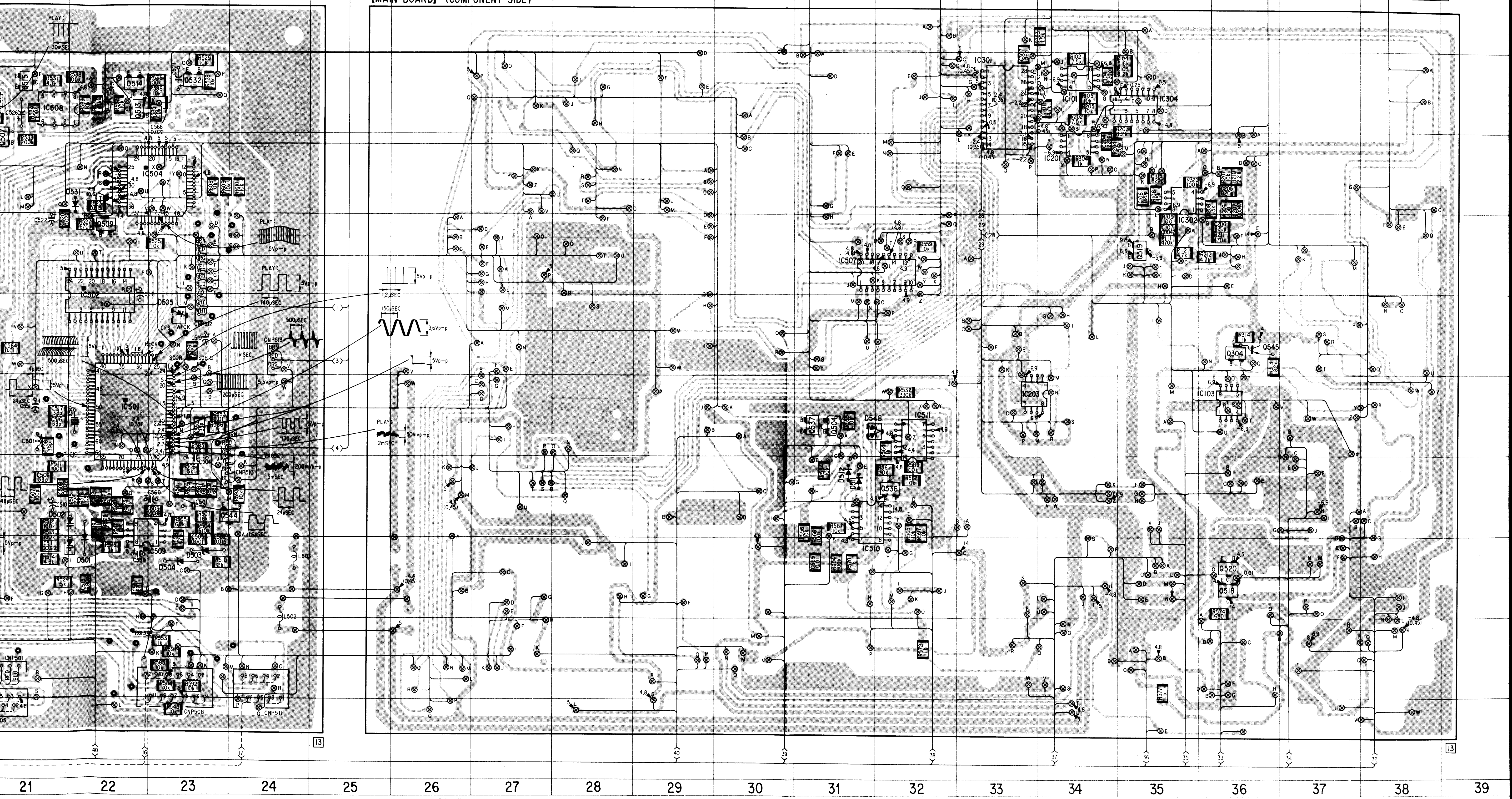
CDX-A10/CDX-J10

Ref. No.	Location	Ref. No.	Location	Ref. No.	Location	Ref. No.	Location	Ref. No.	Location	Ref. No.	Location	Ref. No.	Location
D1	A-3	D305	D-14	D507	C-19	D518	I-13	D534	I-14	IC1	C-2	IC302	D-35
D2	B-3	D401	F-6	D509	J-18	D520	K-15	D541	J-15	IC2	C-4	IC303	F-15
D3	C-3	D402	J-8	D510	H-18	D522	C-19	D544	J-14	IC3	G-4	IC304	C-35
D4	C-3	D403	A-21	D511	H-31	D523	I-17	D546	K-13	IC101	C-34	IC305	E-12
D5	F-4	D501	I-22	D512	H-31	D524	J-18	D548	G-32	IC102	F-14	IC306	G-13
D6	E-3	D502	H-21	D513	H-18	D525	H-20	D550	H-18	IC103	G-36	IC307	G-13
D301	D-16	D503	I-23	D514	G-18	D526	G-19	D552	J-14	IC201	D-34	IC501	G-22
D302	D-16	D504	I-23	D515	J-16	D529	C-20			IC202	G-17	IC502	F-22
D303	F-14	D505	F-23	D516	J-13	D531	D-22			IC203	G-34	IC503	E-20
D304	F-13	D506	G-20	D517	J-12	D533	J-12			IC301	C-33	IC504	D-23

Ref. No.	Location	Ref. No.	Location	Ref. No.	Location	Ref. No.	Location	Ref. No.	Location	Ref. No.	Location	Ref. No.	Location	Ref. No.	Location
IC505	C-18	Q1	E-4	Q11	E-14	Q203	F-14	Q503	I-20	Q513	C-22	Q527	J-12	Q537	G-31
IC506	I-17	Q2	E-5	Q12	E-2	Q204	H-12	Q504	G-31	Q514	C-22	Q528	K-14	Q538	I-14
IC507	E-32	Q3	H-4	Q13	E-3	Q301	F-14	Q505	H-20	Q515	C-21	Q529	K-14	Q540	D-13
IC508	C-21	Q4	H-2	Q14	E-3	Q302	F-13	Q506	C-21	Q518	I-36	Q530	K-14	Q541	J-15
IC509	I-23	Q5	D-3	Q101	C-16	Q303	G-13	Q507	D-21	Q519	E-35	Q531	J-14	Q542	I-12
IC510	H-32	Q6	D-4	Q102	G-12	Q304	F-36	Q508	F-20	Q520	I-36	Q532	C-23	Q543	K-12
IC511	G-32	Q7	D-4	Q103	E-15	Q401	F-6	Q509	E-22	Q521	D-15	Q533	H-20	Q544	H-24
IC512	K-15	Q8	F-2	Q104	G-12	Q402	J-8	Q510	I-20	Q524	I-13	Q534	H-20	Q545	F-36
		Q9	F-3	Q201	D-16	Q403	B-7	Q511	I-12	Q525	J-13	Q535	H-20	Q546	I-15
		Q10	F-2	Q202	H-12	Q502	F-20	Q512	I-12	Q526	J-14	Q536	H-32		

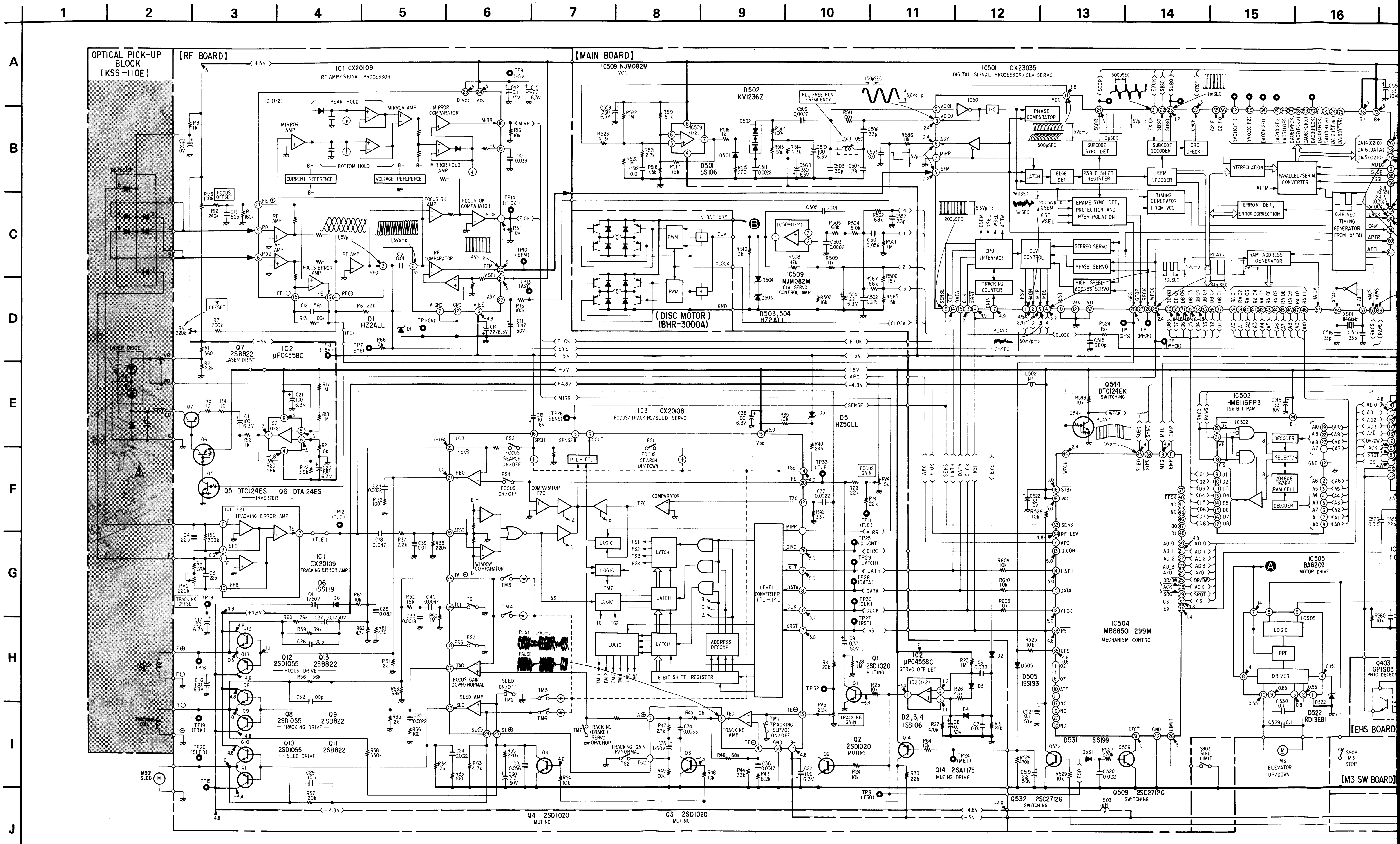

S402
(EJECT)
03
NDBY
11

【MAIN BOARD】 (COMPONENT SIDE)

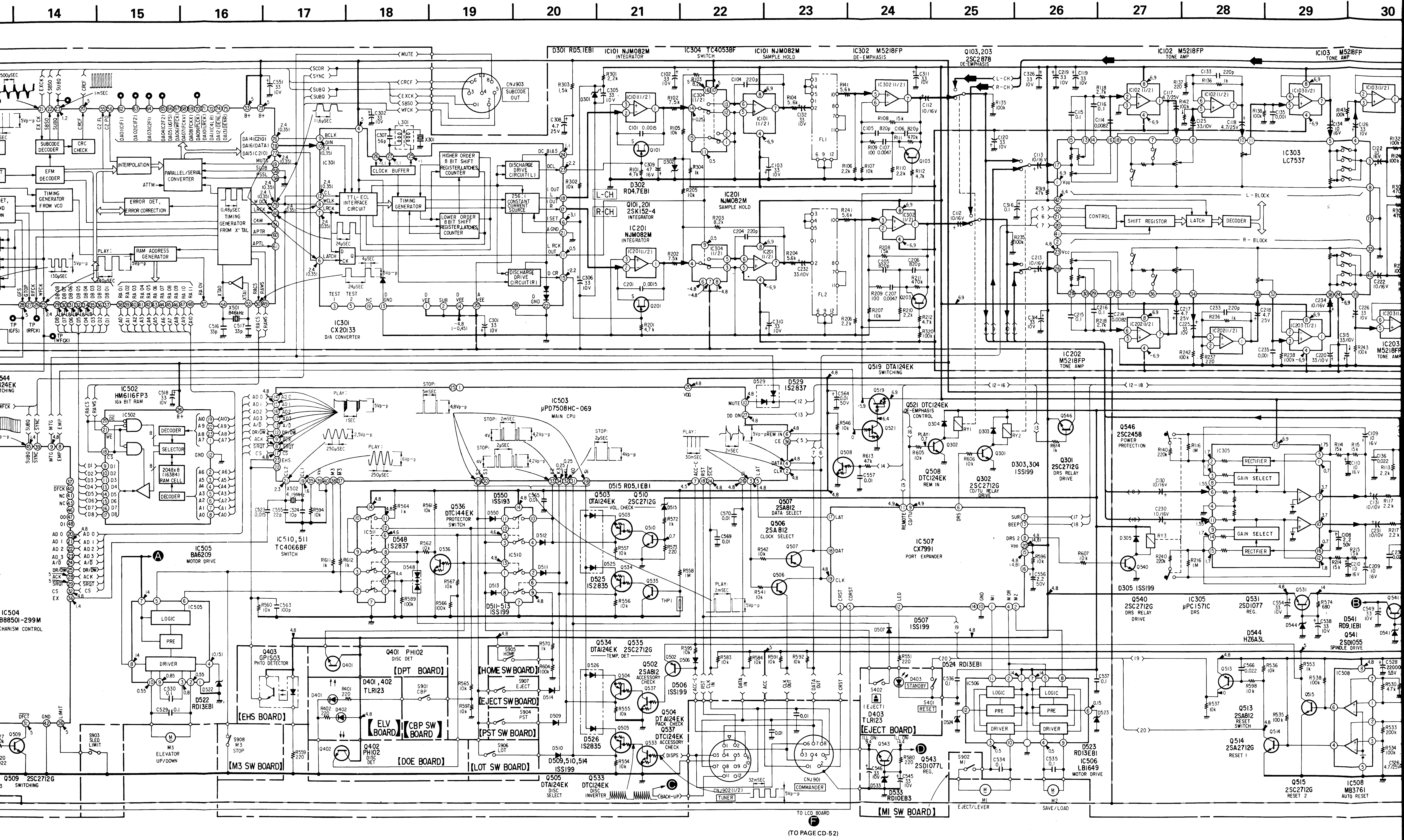

21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
PLAY:
30mSEC
IC508
Q514
Q532
Q513
C566
0.022
IC504
D531
Q509
C522
IC502
D505
PLAY:
5Vp-p
140μSEC
500μSEC
CNP513
BRN
RED
ORG
1mSEC
5.5Vp-p
200μSEC
IC501
SCOR
SUB-Q
WFCK
CFS
RFCK
130μSEC
PAUSE
200mVp-p
5mSEC
24μSEC
CNP510
L501
PLCK
IC509
D501
D502
D504
D503
Q544
L503
L502
CNP501
CNP508
CNP511
1.2μSEC
5Vp-p
150μSEC
3.6Vp-p
PLAY:
50mVp-p
2mSEC
-4.8
(0.45)
IC301
IC101
IC304
IC201
IC302
IC507
Q519
Q304
Q545
IC203
IC103
IC511
D548
Q504
IC510
D512
D511
Q536
Q520
Q518
13

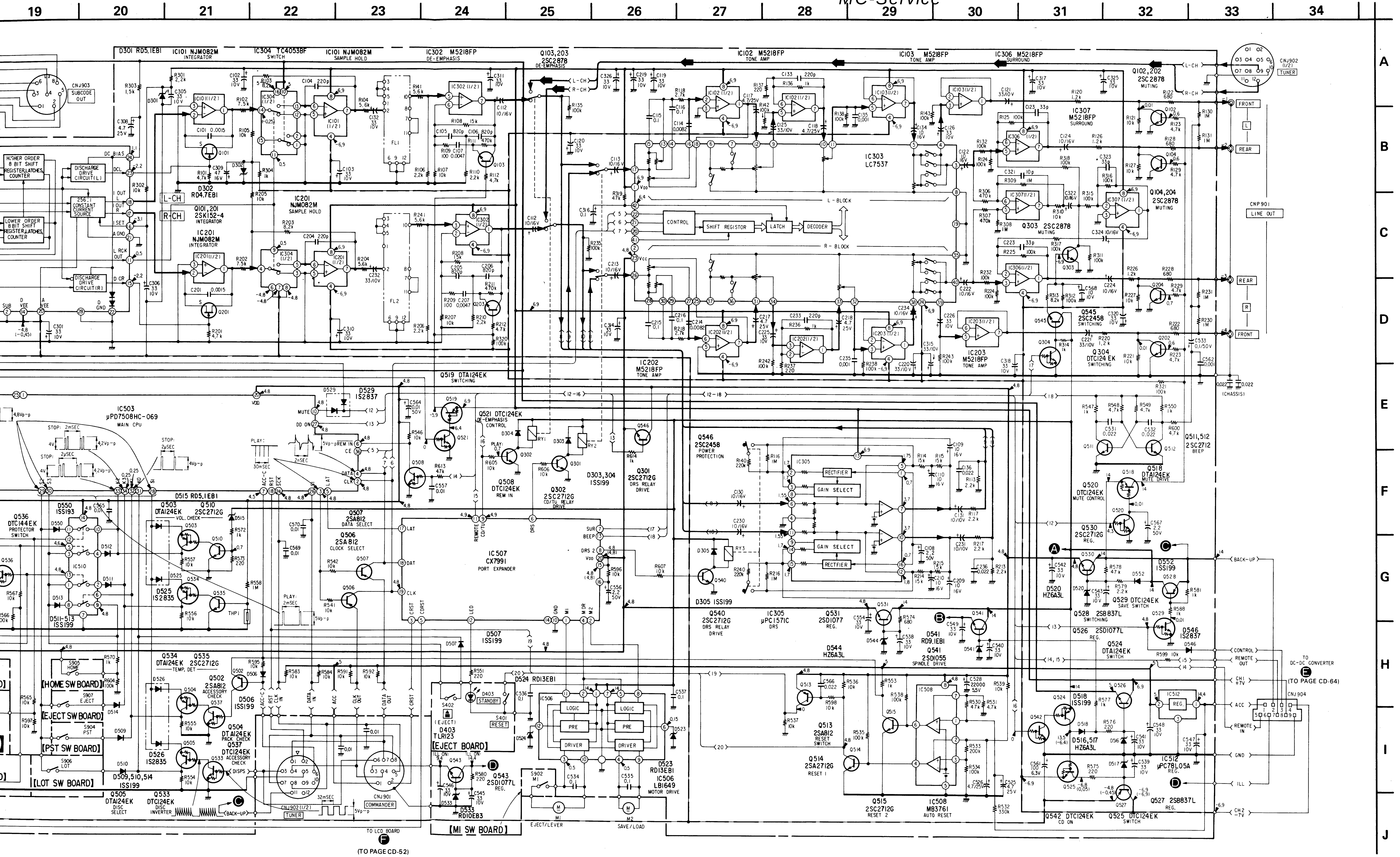
4-4. SCHEMATIC DIAGRAM – for Main Section –

- See page CD-65 for notes.



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
A B C D E F G H I J
OPTICAL PICK-UP BLOCK (KSS-110E)
[RF BOARD]
[MAIN BOARD]
DETECTOR
LASER DIODE
FOCUS COIL
TRACKING COIL
M901 SLED
IC1 CX20109 RF AMP/SIGNAL PROCESSOR
PEAK HOLD
MIRROR AMP
MIRROR COMPARATOR
BOTTOM HOLD
MIRROR HOLD AMP
CURRENT REFERENCE
VOLTAGE REFERENCE
FOCUS OK AMP
FOCUS OK COMPARATOR
RF AMP
FOCUS ERROR AMP
RF COMPARATOR
FOCUS OFFSET
RF OFFSET
TRACKING OFFSET
D1 HZ2ALL
Q7 2SB822 LASER DRIVE
IC2 μPC4558C
Q5 DTC124ES Q6 DTA124ES INVERTER
IC1(1/2) TRACKING ERROR AMP
IC1 CX20109 TRACKING ERROR AMP
D6 1SS119
Q12 2SD1055 Q13 2SB822 FOCUS DRIVE
Q8 2SD1055 Q9 2SB822 TRACKING DRIVE
Q10 2SD1055 Q11 2SB822 SLED DRIVE
IC509 NJM082M VCO
D502 KV1236Z
PLL FREE RUN FREQUENCY
D501 1SS106
V BATTERY
PWM
(DISC MOTOR) (BHR-3000A)
IC509 NJM082M CLV SERVO CONTROL AMP
D503,504 HZ2ALL
IC3 CX20108 FOCUS/TRACKING/SLED SERVO
D5 HZ5CLL
FOCUS SEARCH ON/OFF
FOCUS SEARCH UP/DOWN
FOCUS ON/OFF
COMPARATOR FZC
COMPARATOR
WINDOW COMPARATOR
FOCUS GAIN DOWN/NORMAL
SLED AMP
SLED ON/OFF
LOGIC
LATCH
ADDRESS DECODE
8 BIT SHIFT REGISTER
LEVEL CONVERTER TTL – I²L
TRACKING (BRAKE) SERVO ON/CHOP
TRACKING GAIN UP/NORMAL
TRACKING AMP
TRACKING (SERVO) ON/OFF
FOCUS GAIN
TRACKING GAIN
Q1 2SD1020 MUTING
Q2 2SD1020 MUTING
Q3 2SD1020 MUTING
Q4 2SD1020 MUTING
IC2 μPC4558C SERVO OFF DET
D2,3,4 1SS106
Q14 2SA1175 MUTING DRIVE
PLAY 1.2Vp-p
PAUSE
IC501 CX23035 DIGITAL SIGNAL PROCESSOR/CLV SERVO
PHASE COMPARATOR
SUBCODE SYNC DET
SUBCODE DECODER
CRC CHECK
INTERPOLATION
PARALLEL/SERIAL CONVERTER
LATCH
EDGE DET
23BIT SHIFT REGISTER
EFM DECODER
FRAME SYNC DET, PROTECTION AND INTER POLATION
TIMING GENERATOR FROM VCO
ERROR DET, ERROR CORRECTION
TIMING GENERATOR FROM X'TAL
CPU INTERFACE
CLV CONTROL
STEREO SERVO
PHASE SERVO
HIGH SPEED ACCESS SERVO
TRACKING COUNTER
RAM ADDRESS GENERATOR
X501 8.4672MHz
Q544 DTC124EK SWITCHING
IC502 HM6116FP3 16k BIT RAM
DECODER
SELECTOR
2048×8 (16384) RAM CELL
IC504 MB88501-299M MECHANISM CONTROL
D505 1SS193
D531 1SS199
Q532 2SC2712G SWITCHING
Q509 2SC2712G SWITCHING
IC505 BA6209 MOTOR DRIVE
LOGIC
PRE
DRIVER
D522 RD13EB1
S903 SLED LIMIT
M3 ELEVATOR UP/DOWN
S908 M3 STOP
Q403 GP1S03 PHOTO DETECT
[EHS BOARD]
[M3 SW BOARD]


14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
SUBCODE DECODER
CRC CHECK
EFM DECODER
TIMING GENERATOR FROM VCO
INTERPOLATION
PARALLEL/SERIAL CONVERTER
ERROR DET, ERROR CORRECTION
RAM ADDRESS GENERATOR
TIMING GENERATOR FROM X'TAL
X501 846kHz
TTL-ECL INTERFACE CIRCUIT
TIMING GENERATOR
CLOCK BUFFER
HIGHER ORDER 8 BIT SHIFT REGISTER LATCHES COUNTER
LOWER ORDER 8 BIT SHIFT REGISTER LATCHES COUNTER
DISCHARGE DRIVE CIRCUIT(L)
DISCHARGE DRIVE CIRCUIT(R)
256:1 CONSTANT CURRENT SOURCE
IC301 CX20133 D/A CONVERTER
CNJ903 SUBCODE OUT
D301 RD5.1EB1
IC101 NJM082M INTEGRATOR
IC304 TC4053BF SWITCH
IC101 NJM082M SAMPLE HOLD
IC302 M5218FP DE-EMPHASIS
Q103,203 2SC2878 DE-EMPHASIS
IC102 M5218FP TONE AMP
IC103 M5218FP TONE AMP
D302 RD4.7EB1
Q101,201 2SK152-4 INTEGRATOR
IC201 NJM082M INTEGRATOR
IC201 NJM082M SAMPLE HOLD
FL1
FL2
L-CH
R-CH
IC303 LC7537
L-BLOCK
R-BLOCK
CONTROL
SHIFT REGISTOR
LATCH
DECODER
IC202 M5218FP TONE AMP
IC203 M5218FP TONE AMP
IC502 HM6116FP3 16k BIT RAM
2048×8 (16384) RAM CELL
SELECTOR
IC503 µPD7508HC-069 MAIN CPU
X502 4.19MHz
IC510,511 TC4066BF SWITCH
IC505 BA6209 MOTOR DRIVE
LOGIC
PRE
DRIVER
IC504 MB88501-299M MECHANISM CONTROL
D522 RD13EB1
M3 ELEVATOR UP/DOWN
Q509 2SC2712G SWITCHING
S903 SLED LIMIT
Q403 GP1S03 PHTO DETECTOR
[EHS BOARD]
S908 M3 STOP
[M3 SW BOARD]
Q401 PH102 DISC DET
[DPT BOARD]
D401,402 TLR123
S901 CBP
[ELV BOARD]
[CBP SW BOARD]
Q402 PH102 DISC DET
[DOE BOARD]
Q536 DTC144EK PROTECTOR SWITCH
D548 1S2837
D550 1SS193
D511-513 1SS199
S905 HOME
[HOME SW BOARD]
S907 EJECT
[EJECT SW BOARD]
S904 PST
[PST SW BOARD]
S906 LOT
[LOT SW BOARD]
D509,510,514 1SS199
D515 RD5.1EB1
Q503 DTA124EK VOL. CHECK
Q510 2SC2712G
D525 1S2835
THP1
Q534 DTA124EK
Q535 2SC2712G TEMP. DET
Q502 2SA812 ACCESSORY CHECK
D526 1S2835
D506 1SS199
Q504 DTA124EK PACK CHECK
Q537 DTC124EK ACCESSORY CHECK
Q505 DTA124EK DISC SELECT
Q533 DTC124EK DISC INVERTER
BACK-UP
CNJ902(1/2) TUNER
CNJ901 COMMANDER
TO LCD BOARD
(TO PAGE CD-52)
Q507 2SA812 DATA SELECT
Q506 2SA812 CLOCK SELECT
IC507 CX7991 PORT EXPANDER
D529 1S2837
Q519 DTA124EK SWITCHING
Q521 DTC124EK DE-EMPHASIS CONTROL
Q508 DTC124EK REM IN
Q302 2SC2712G CD/TU RELAY DRIVE
RY1
RY2
D303,304 1SS199
Q301 2SC2712G DRS RELAY DRIVE
D507 1SS199
D524 RD13EB1
S402 (EJECT)
D403 TLR123
D403 STANDBY
S401 RESET
[EJECT BOARD]
Q543 2SD1077L REG.
D533 RD10EB3
S902 M1
[M1 SW BOARD]
IC506 LB1649 MOTOR DRIVE
D523 RD13EB1
M1 EJECT/LEVER
M2 SAVE/LOAD
Q546 2SC2458 POWER PROTECTION
IC305
RECTIFIER
GAIN SELECT
RECTFIER
RY3
D305 1SS199
Q540 2SC2712G DRS RELAY DRIVE
IC305 µPC1571C DRS
Q531 2SD1077 REG.
D541 RD9.1EB1
Q541 2SD1055 SPINDLE DRIVE
D544 HZ6A3L
Q513 2SA812 RESET SWITCH
Q514 2SA2712G RESET 1
Q515 2SC2712G RESET 2
IC508 MB3761 AUTO RESET
Ⓐ
Ⓑ
Ⓒ
Ⓓ
Ⓕ


19
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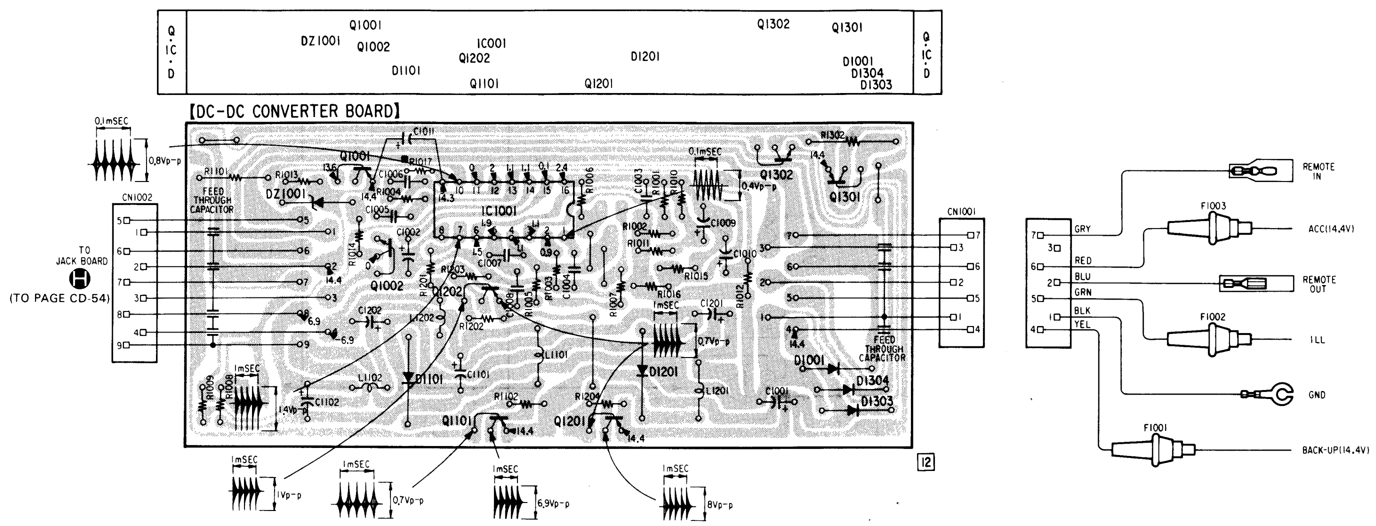
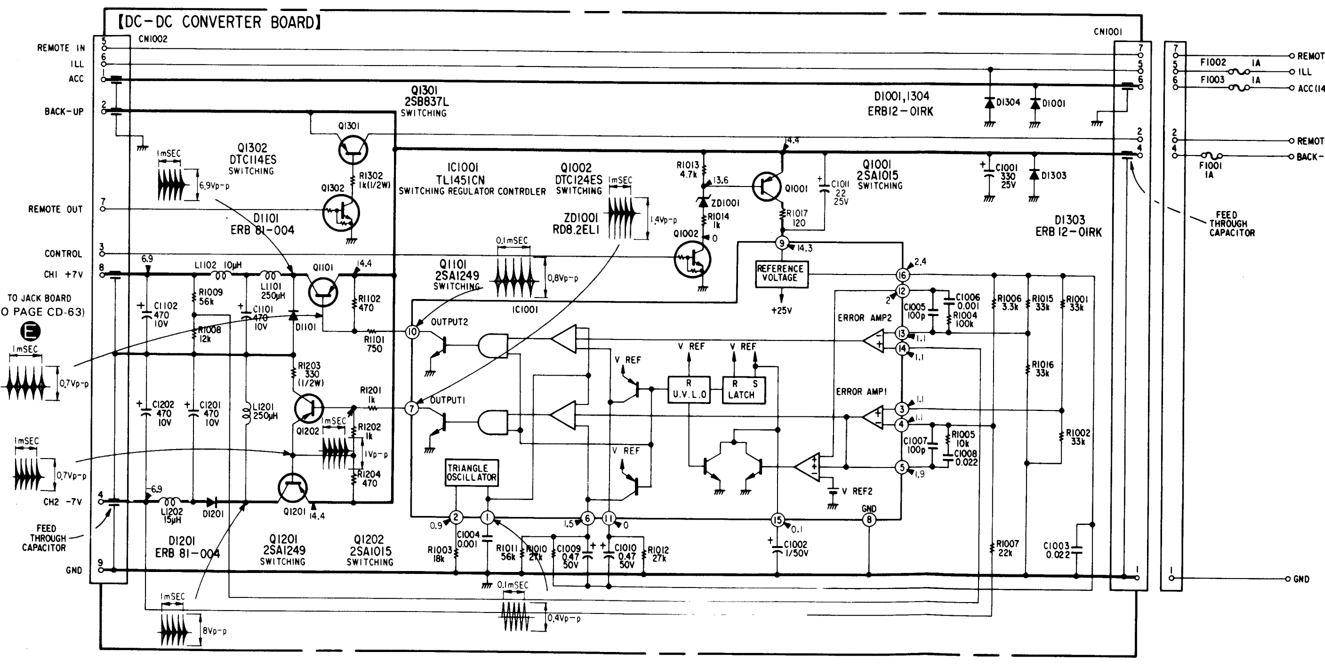
28
29
30
31
32
33
34
A
B
C
D
E
F
G
H
I
J
D301 RD5.1EB1
IC101 NJM082M INTEGRATOR
IC304 TC4053BF SWITCH
IC101 NJM082M SAMPLE HOLD
IC302 M5218FP DE-EMPHASIS
Q103,203 2SC2878 DE-EMPHASIS
IC102 M5218FP TONE AMP
IC103 M5218FP TONE AMP
IC306 M5218FP SURROUND
Q102,202 2SC2878 MUTING
CNJ902 (1/2) TUNER
CNJ903 SUBCODE OUT
HIGHER ORDER 8 BIT SHIFT REGISTER,LATCHES, COUNTER
LOWER ORDER 8 BIT SHIFT REGISTER,LATCHES, COUNTER
DISCHARGE DRIVE CIRCUIT(L)
DISCHARGE DRIVE CIRCUIT(R)
256:1 CONSTANT CURRENT SOURCE
D302 RD4.7EB1
Q101,201 2SK152-4 INTEGRATOR
IC201 NJM082M SAMPLE HOLD
IC201 NJM082M INTEGRATOR
L-CH
R-CH
FL1
FL2
IC303 LC7537
L-BLOCK
R-BLOCK
CONTROL
SHIFT REGISTOR
LATCH
DECODER
IC307 M5218FP SURROUND
Q303 2SC2878 MUTING
Q104,204 2SC2878 MUTING
CNP901 LINE OUT
FRONT
REAR
Q545 2SC2458 SWITCHING
Q304 DTC124EK SWITCHING
IC203 M5218FP TONE AMP
IC202 M5218FP TONE AMP
(CHASSIS)
IC503 μPD7508HC-069 MAIN CPU
D529 1S2837
Q519 DTA124EK SWITCHING
Q521 DTC124EK DE-EMPHASIS CONTROL
Q508 DTC124EK REM IN
Q302 2SC2712G CD/TU RELAY DRIVE
D303,304 1SS199
Q301 2SC2712G DRS RELAY DRIVE
Q546 2SC2458 POWER PROTECTION
IC305
RECTFIER
GAIN SELECT
Q518 DTA124EK MUTE DRIVE
Q511,512 2SC2712 BEEP
Q520 DTC124EK MUTE CONTROL
Q530 2SC2712G REG.
D550 1SS193
Q536 DTC144EK PROTECTOR SWITCH
IC510
D511-513 1SS199
D515 RD5.1EB1
Q503 DTA124EK VOL. CHECK
Q510 2SC2712G
D525 1S2835
Q507 2SA812 DATA SELECT
Q506 2SA812 CLOCK SELECT
IC507 CX7991 PORT EXPANDER
D305 1SS199
Q540 2SC2712G DRS RELAY DRIVE
IC305 μPC1571C DRS
Q531 2SD1077 REG.
D520 HZ6A3L
D552 1SS199
Q528 2SB837L SWITCHING
Q529 DTC124EK SAVE SWITCH
Q526 2SD1077L REG.
D546 1S2837
Q524 DTA124EK SWITCH
D541 RD9.1EB1
Q541 2SD1055 SPINDLE DRIVE
D544 HZ6A3L
D507 1SS199
S905 HOME
[HOME SW BOARD]
S907 EJECT
[EJECT SW BOARD]
S904 PST
[PST SW BOARD]
S906 LOT
[LOT SW BOARD]
Q534 DTA124EK
Q535 2SC2712G TEMP. DET
Q502 2SA812 ACCESSORY CHECK
D506 1SS199
Q504 DTA124EK PACK CHECK
Q537 DTC124EK ACCESSORY CHECK
D526 1S2835
D509,510,514 1SS199
Q505 DTA124EK DISC SELECT
Q533 DTC124EK DISC INVERTER
CNJ902 (1/2) TUNER
CNJ901 COMMANDER
TO LCD BOARD
(TO PAGE CD-52)
D524 RD13EB1
S402 (EJECT)
D403 TLR123
D403 STANDBY
S401 RESET
[EJECT BOARD]
IC506
LOGIC
PRE
DRIVER
D523 RD13EB1
IC506 LB1649 MOTOR DRIVE
Q543 2SD1077L REG.
D533 RD10EB3
S902 M1
[M1 SW BOARD]
M1 EJECT/LEVER
M2 SAVE/LOAD
Q513 2SA812 RESET SWITCH
Q514 2SA2712G RESET 1
Q515 2SC2712G RESET 2
IC508 MB3761 AUTO RESET
D518 1SS199
D516,517 HZ6A3L
IC512 μPC78L05A REG.
Q527 2SB837L REG.
Q542 DTC124EK CD ON
Q525 DTC124EK SWITCH
CNJ904
BACK-UP
CONTROL
REMOTE OUT
CH1 +7V
ACC
REMOTE IN
GND
ILL
CH2 -7V
TO DC-DC CONVERTER (TO PAGE CD-64)
A
B
C
D
E
F

4-5. MOUNTING DIAGRAM — for DC/DC Converter Section —


[DC-DC CONVERTER BOARD]
CN1002
TO JACK BOARD
H
(TO PAGE CD-54)
FEED THROUGH CAPACITOR
IC1001
Q1001
Q1002
Q1101
Q1201
Q1202
Q1301
Q1302
DZ1001
D1001
D1101
D1201
D1304
D1303
CN1001
REMOTE IN
ACC(14.4V)
REMOTE OUT
ILL
GND
BACK-UP(14.4V)
F1001
F1002
F1003
GRY
RED
BLU
GRN
BLK
YEL
1mSEC
0.1mSEC
0.8Vp-p
0.4Vp-p
0.7Vp-p
1Vp-p
6.9Vp-p
8Vp-p
12

4-6. SCHEMATIC DIAGRAM — for DC/DC Converter Section —


[DC-DC CONVERTER BOARD]
CN1002
CN1001
REMOTE IN
ILL
ACC
BACK-UP
REMOTE OUT
CONTROL
CH1 +7V
CH2 -7V
TO JACK BOARD
(TO PAGE CD-63)
H
FEED THROUGH CAPACITOR
GND
Q1301 2SB837L SWITCHING
Q1302 DTC114ES SWITCHING
D1101 ERB 81-004
IC1001 TL1451CN SWITCHING REGULATOR CONTROLER
Q1002 DTC124ES SWITCHING
ZD1001 RD8.2ELI
Q1001 2SA1015 SWITCHING
D1001,1304 ERB12-01RK
D1303 ERB 12-01RK
Q1101 2SA1249 SWITCHING
Q1201 2SA1249 SWITCHING
Q1202 2SA1015 SWITCHING
D1201 ERB 81-004
REFERENCE VOLTAGE
ERROR AMP2
ERROR AMP1
OUTPUT2
OUTPUT1
TRIANGLE OSCILLATOR
U.V.L.O
LATCH
V REF
F1001 1A
F1002 1A
F1003 1A
REMOTE IN
ILL
ACC(14.4V)
REMOTE OUT
BACK-UP(14.4V)
GND

Note on Schematic Diagram:

- All capacitors are in µF unless otherwise noted. pF: µµF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼ W or less unless otherwise specified.
- ——▶ : signal path.
- ➡ : tuner signal path.
- ▬ : B+ bus.
- ▬ ▬ ▬ : B– bus.
- ☐ : adjustment for repair.
- Power voltage is 14.4 V and fed with DC voltage regulator from ACC and BACK-UP. Voltages are dc with respect to ground in CD playing mode/Manual tuning (detuned) mode. Voltage variations may be noted due to normal production tolerances.
- Wavefroms are taken to ground in CD playing mode/Manual tuning (detured) mode by using oscilloscope.
- Switch

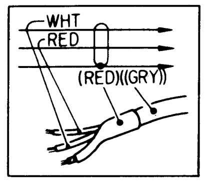
Ref. No.	Switch	Position
S401	RESET	OFF
S402	EJECT	OFF
S901	CBP	OFF
S902	M1	OFF
S903	SLED LIMIT	OFF
S904	PST	OFF
S905	HOME	OFF
S906	LOT	OFF
S907	EJECT	OFF
S908	M3 STOP	OFF

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

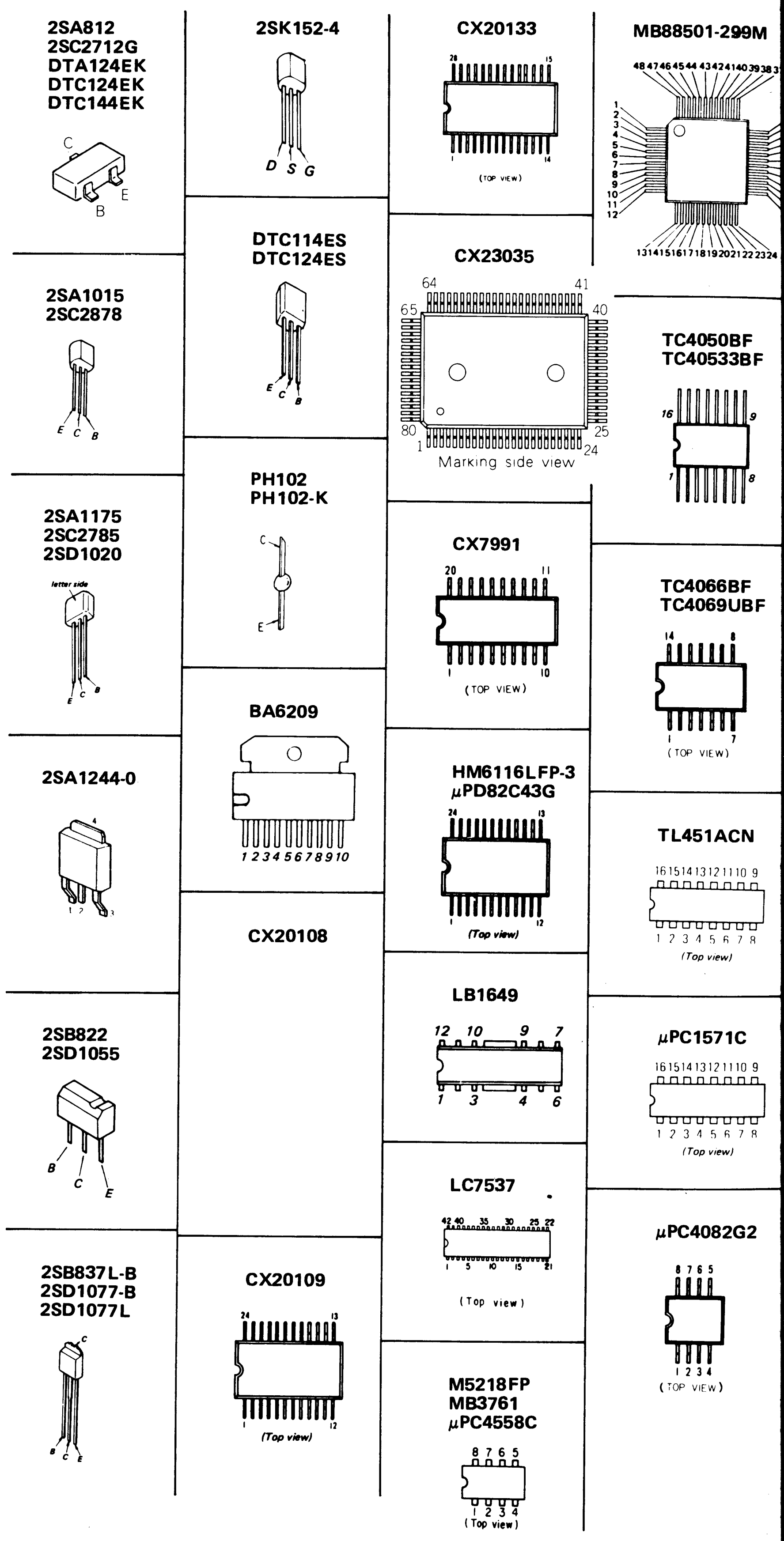
Note on Mounting Diagram:

- Color code or sleeving over the end of the jacket.

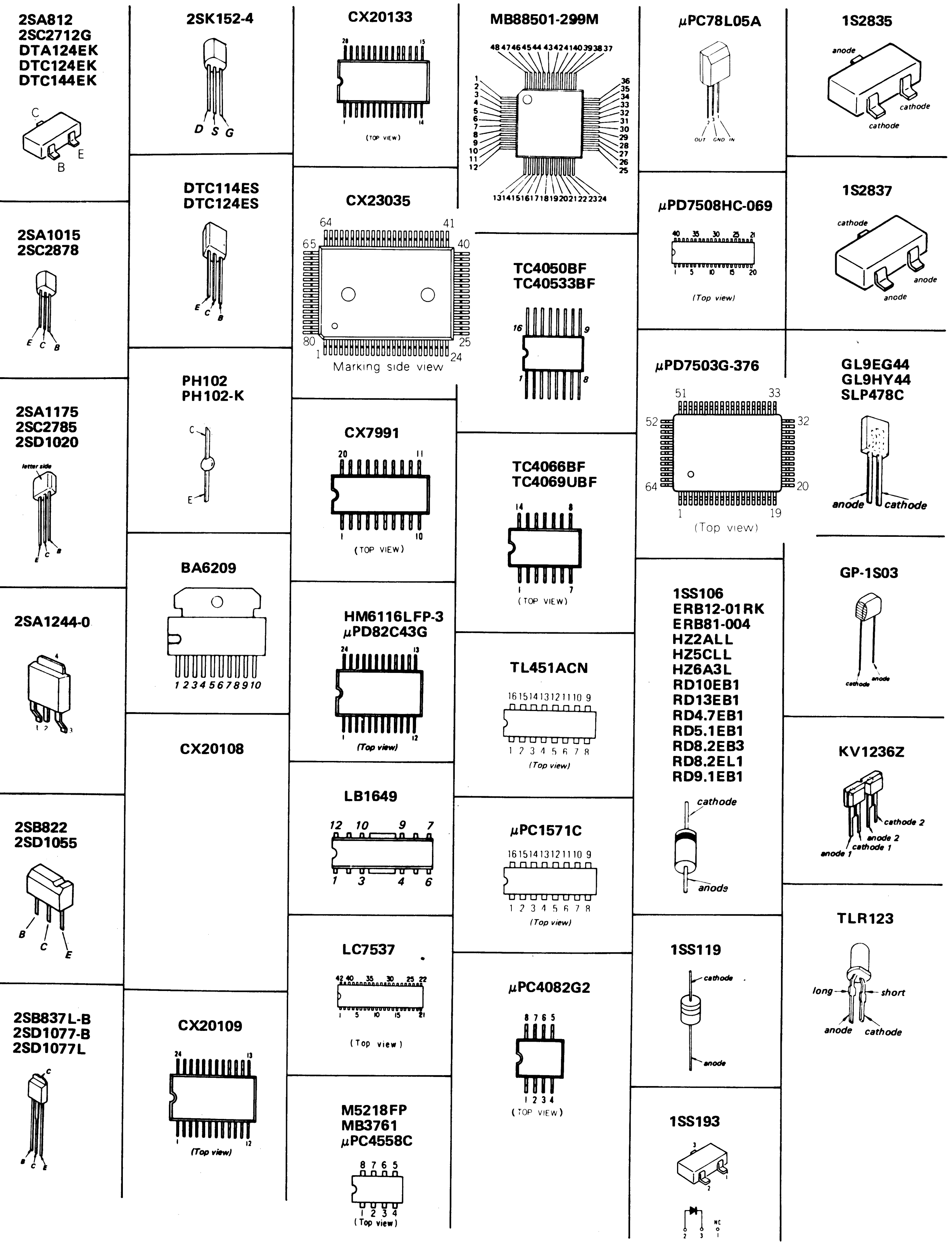

WHT
RED
(RED)(GRY)

- ○— : parts extracted from the component side.
- ●— : parts extracted from the conductor side.
- ■ : part mounted on the conductor side.
- ⊗ : Through hole.
- ▨ : carbon pattern.
- —◀|— : MELF components.

- **Semiconductor Lead Layouts**


2SA812
2SC2712G
DTA124EK
DTC124EK
DTC144EK
C
B
E
2SK152-4
D S G
CX20133
(TOP VIEW)
MB88501-299M
2SA1015
2SC2878
E C B
DTC114ES
DTC124ES
E C B
CX23035
64
41
65
40
80
25
1
24
Marking side view
TC4050BF
TC40533BF
16
9
1
8
2SA1175
2SC2785
2SD1020
letter side
E C B
PH102
PH102-K
C
E
CX7991
20
11
1
10
(TOP VIEW)
TC4066BF
TC4069UBF
14
8
1
7
(TOP VIEW)
2SA1244-0
BA6209
1 2 3 4 5 6 7 8 9 10
HM6116LFP-3
µPD82C43G
24
13
1
12
(Top view)
TL451ACN
16 15 14 13 12 11 10 9
1 2 3 4 5 6 7 8
(Top view)
CX20108
LB1649
12 10 9 7
1 3 4 6
µPC1571C
16 15 14 13 12 11 10 9
1 2 3 4 5 6 7 8
(Top view)
2SB822
2SD1055
B C E
LC7537
42 40 35 30 25 22
1 5 10 15 21
(Top view)
µPC4082G2
8 7 6 5
1 2 3 4
(TOP VIEW)
2SB837L-B
2SD1077-B
2SD1077L
B C E
CX20109
24
13
1
12
(Top view)
M5218FP
MB3761
µPC4558C
8 7 6 5
1 2 3 4
(Top view)

Semiconductor Lead Layouts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2SC2712G
DTA124EK
DTC124EK
DTC144EK
C
B
E
2SA1015
2SC2878
E C B
2SA1175
2SC2785
2SD1020
letter side
E C B
2SA1244-0
1 2 3
4
2SB822
2SD1055
B C E
2SB837L-B
2SD1077-B
2SD1077L
C
B C E
2SK152-4
D S G
DTC114ES
DTC124ES
E C B
PH102
PH102-K
C
E
BA6209
1 2 3 4 5 6 7 8 9 10
CX20108
CX20109
24
13
1
12
(Top view)
CX20133
28
15
1
14
(TOP VIEW)
CX23035
64
41
65
40
80
25
1
24
Marking side view
CX7991
20
11
1
10
(TOP VIEW)
HM6116LFP-3
μPD82C43G
24
13
1
12
(Top view)
LB1649
12 10 9 7
1 3 4 6
LC7537
42 40 35 30 25 22
1 5 10 15 21
(Top view)
M5218FP
MB3761
μPC4558C
8 7 6 5
1 2 3 4
(Top view)
MB88501-299M
48 47 46 45 44 43 42 41 40 39 38 37
1 2 3 4 5 6 7 8 9 10 11 12
36 35 34 33 32 31 30 29 28 27 26 25
13 14 15 16 17 18 19 20 21 22 23 24
TC4050BF
TC40533BF
16
9
1
8
TC4066BF
TC4069UBF
14
8
1
7
(TOP VIEW)
TL451ACN
16 15 14 13 12 11 10 9
1 2 3 4 5 6 7 8
(Top view)
μPC1571C
16 15 14 13 12 11 10 9
1 2 3 4 5 6 7 8
(Top view)
μPC4082G2
8 7 6 5
1 2 3 4
(TOP VIEW)
μPC78L05A
OUT GND IN
μPD7508HC-069
40 35 30 25 21
1 5 10 15 20
(Top view)
μPD7503G-376
51
33
52
32
64
20
1
19
(Top view)
1SS106
ERB12-01RK
ERB81-004
HZ2ALL
HZ5CLL
HZ6A3L
RD10EB1
RD13EB1
RD4.7EB1
RD5.1EB1
RD8.2EB3
RD8.2EL1
RD9.1EB1
cathode
anode
1SS119
cathode
anode
1SS193
3
1
2
NC
2 3 1
1S2835
anode
cathode
cathode
1S2837
cathode
anode
anode
GL9EG44
GL9HY44
SLP478C
anode
cathode
GP-1S03
cathode
anode
KV1236Z
cathode 2
anode 2
cathode 1
anode 1
TLR123
long
short
anode
cathode

EXPLODED VIEWS AND PARTS LIST

NOTE:

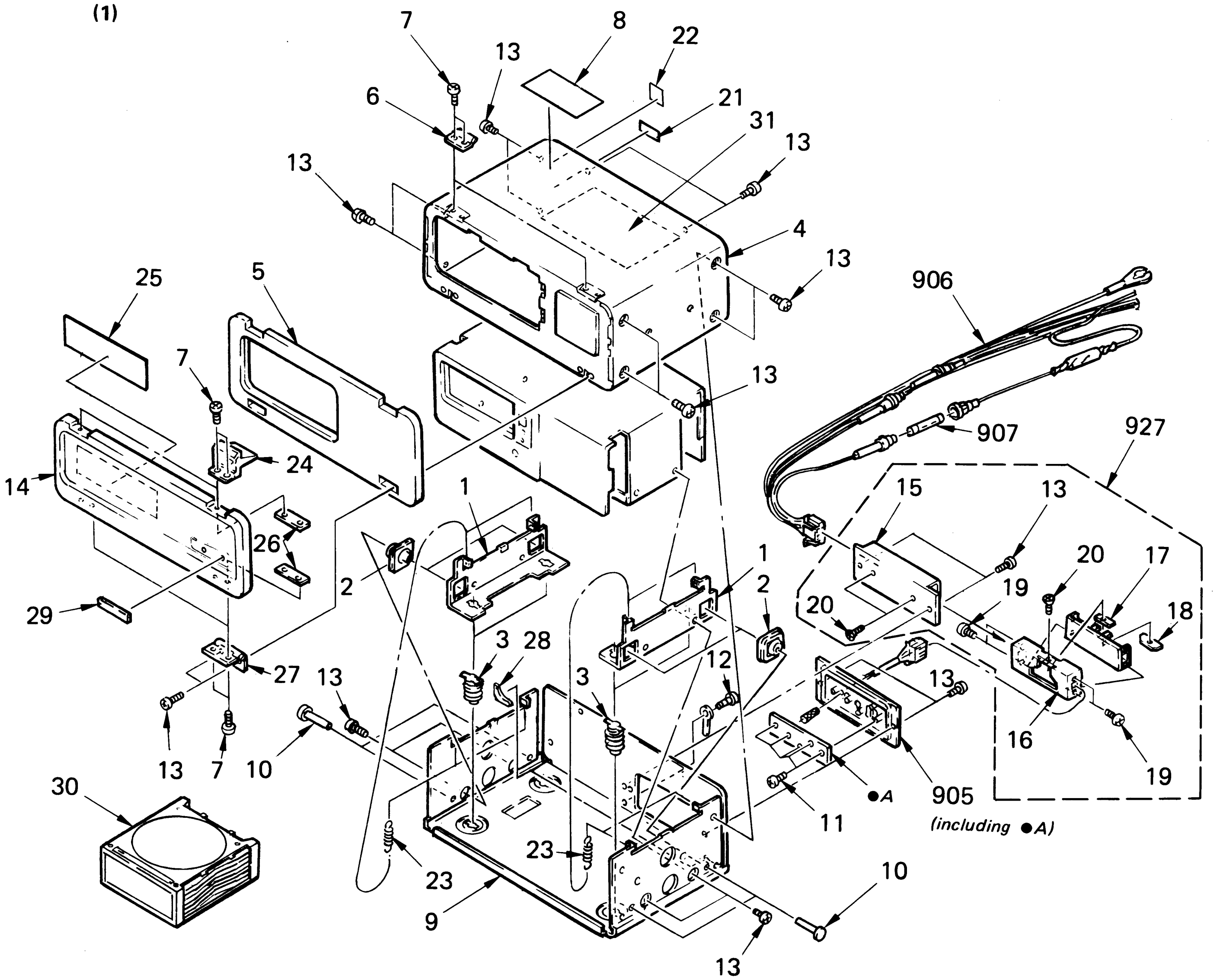
The mechanical parts with no reference number in the exploded views are not supplied.

· Items marked " ★ " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

· The construction parts of an assembled part are indicated with a collation number in the remark column.

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

(1)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21
31
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25
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906
7
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14
24
907
927
1
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2
1
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18
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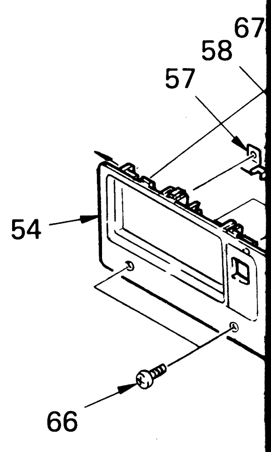
28
12
27
13
3
13
16
30
13
7
10
●A
905
(including ●A)
19
11
23
23
10
9
13

No.	Part No.	Description	Remarks
1	*3-331-954-01	BRACKET, DAMPER	
2	3-329-598-01	DAMPER (A), SUPER	
3	X-3329-526-1	INSULATOR ASSY	
4	3-329-543-01	PANEL, UPPER	
5	3-329-542-01	PANEL, FRONT	
6	3-412-612-11	LOCK	
7	7-682-548-09	SCREW +B 3X8	
8	*3-331-939-01	LABEL, UPPER	
9	*3-329-544-01	PANEL, LOWER	
10	3-331-930-01	SHAFT	
11	7-685-132-11	SCREW +P 2.6X5 TYPE2 NON-SLIT	
12	7-682-559-04	SCREW +B 4X5	
13	3-703-108-11	SCREW (CLAW), S TIGHT +BV 3X6	
14	3-329-537-01	DOOR, FRONT	
15	*3-331-968-01	CASE (A)	
16	*3-331-969-01	CASE (B)	
17	4-886-885-00	SHEET, INSULATING	
18	*3-331-978-01	BRACKET	
19	7-682-646-01	SCREW +PS 3X5	
20	7-621-592-00	SCREW +K 2.6X6	
21	*3-329-526-01	(US,E).......LABEL, MODEL NUMBER	
	*3-329-527-01	(Canadian)...LABEL, MODEL NUMBER	
	*3-329-528-01	(AEP)........LABEL, MODEL NUMBER	
22	*3-323-294-01	(US,Canadian)...LABEL, DHHS INTERLOCK	
23	3-495-121-00	SPRING, TENSION	
24	3-331-965-01	LOCK	
25	3-331-966-01	LABEL (DOOR), CAUTION	
26	*3-331-935-01	PLATE, SCREW, DOOR	
27	X-3329-527-1	PLATE ASSY, J	
28	9-911-815-03	PACKING, REAR	
29	*3-651-703-00	EMBLEM, SONY	
30	X-3329-506-1	PACK ASSY	
31	3-331-003-01	LABEL, SERVICE	
905	1-536-968-21	JACK BOARD	
906	*1-558-344-11	CORD (WITH CONNECTOR)	
907	1-532-360-XX	FUSE (1A)	
927	1-464-582-11	CONVERTER UNIT, DC-DC	13, 15, 16, 17, 18, 19, 20

(2)


67
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57
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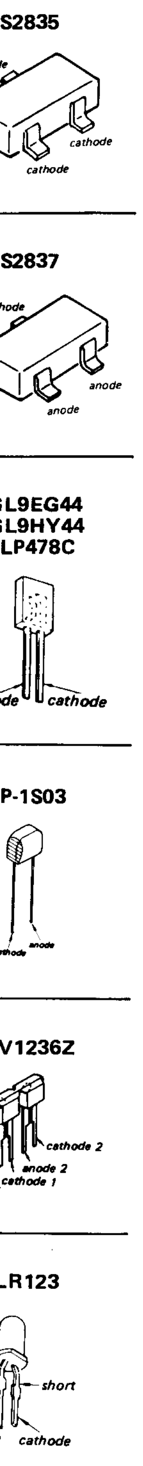
66

No.	Part No.
51	7-623-507-01
53	7-685-855-01
54	3-329-536-01
55	3-329-582-01
56	7-685-132-11
57	3-329-568-01
58	3-329-569-01
59	3-331-948-01
	3-331-948-11
60	3-331-931-01
61	*3-331-928-01
62	7-685-861-09

SECTION 5
EXPLODED VIEWS AND PARTS LIST

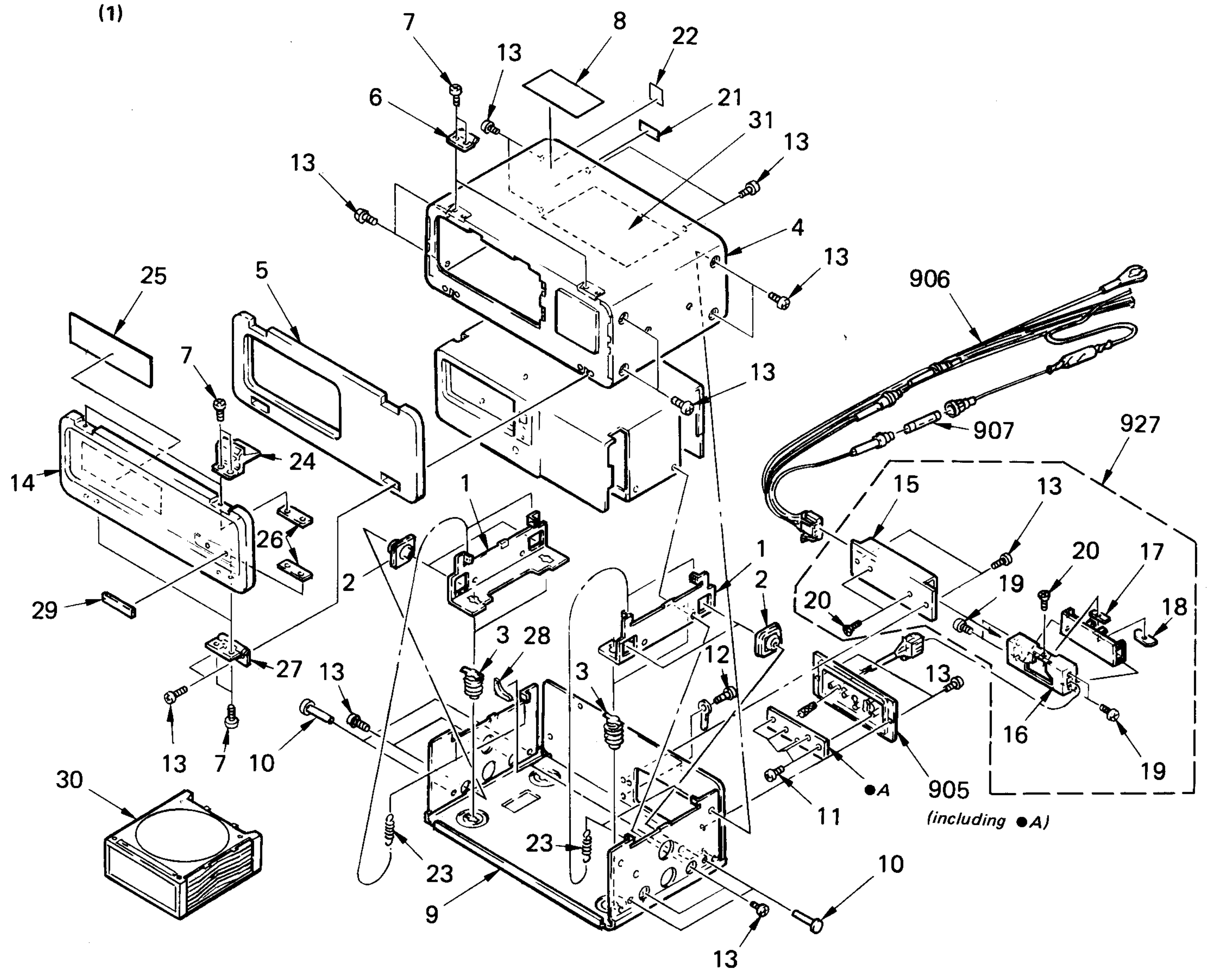

S2835
cathode
cathode
S2837
anode
anode
L9EG44
L9HY44
LP478C
de
cathode
P-1S03
anode
V1236Z
cathode 2
anode 2
cathode 1
LR123
short
cathode

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked " ★ " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The construction parts of an assembled part are indicated with a collation number in the remark column.

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

(1)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8
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927
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16
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13
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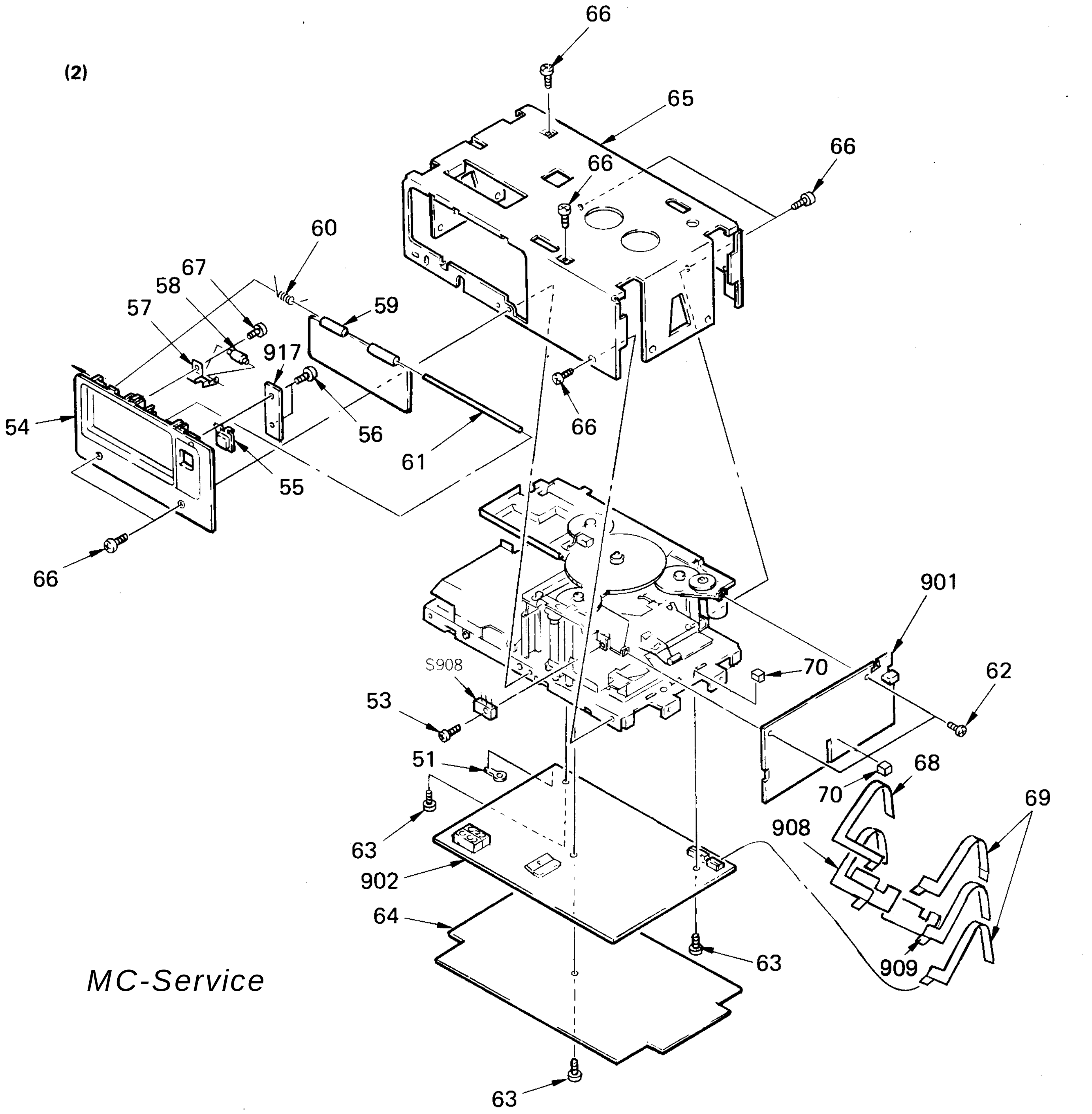
10
905
●A
11
(including ●A)
30
23
23
10
9
13

No.	Part No.	Description	Remarks
1	*3-331-954-01	BRACKET, DAMPER	
2	3-329-598-01	DAMPER (A), SUPER	
3	X-3329-526-1	INSULATOR ASSY	
4	3-329-543-01	PANEL, UPPER	
5	3-329-542-01	PANEL, FRONT	
6	3-412-612-11	LOCK	
7	7-682-548-09	SCREW +B 3X8	
8	*3-331-939-01	LABEL, UPPER	
9	*3-329-544-01	PANEL, LOWER	
10	3-331-930-01	SHAFT	
11	7-685-132-11	SCREW +P 2.6X5 TYPE2 NON-SLIT	
12	7-682-559-04	SCREW +B 4X5	
13	3-703-108-11	SCREW (CLAW), S TIGHT +BV 3X6	
14	3-329-537-01	DOOR, FRONT	
15	*3-331-968-01	CASE (A)	
16	*3-331-969-01	CASE (B)	
17	4-886-885-00	SHEET, INSULATING	
18	*3-331-978-01	BRACKET	
19	7-682-646-01	SCREW +PS 3X5	
20	7-621-592-00	SCREW +K 2.6X6	
21	*3-329-526-01	(US,E).......LABEL, MODEL NUMBER	
	*3-329-527-01	(Canadian)...LABEL, MODEL NUMBER	
	*3-329-528-01	(AEP)........LABEL, MODEL NUMBER	
22	*3-323-294-01	(US,Canadian)...LABEL, DHHS INTERLOCK	
23	3-495-121-00	SPRING, TENSION	
24	3-331-965-01	LOCK	
25	3-331-966-01	LABEL (DOOR), CAUTION	
26	*3-331-935-01	PLATE, SCREW, DOOR	
27	X-3329-527-1	PLATE ASSY, J	
28	9-911-815-03	PACKING, REAR	
29	*3-651-703-00	EMBLEM, SONY	
30	X-3329-506-1	PACK ASSY	
31	3-331-003-01	LABEL, SERVICE	
905	1-536-968-21	JACK BOARD	
906	*1-558-344-11	CORD (WITH CONNECTOR)	
907	1-532-360-XX	FUSE (1A)	
927	1-464-582-11	CONVERTER UNIT, DC-DC	13, 15, 16, 17, 18, 19, 20

(2)


66
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917
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901
S908
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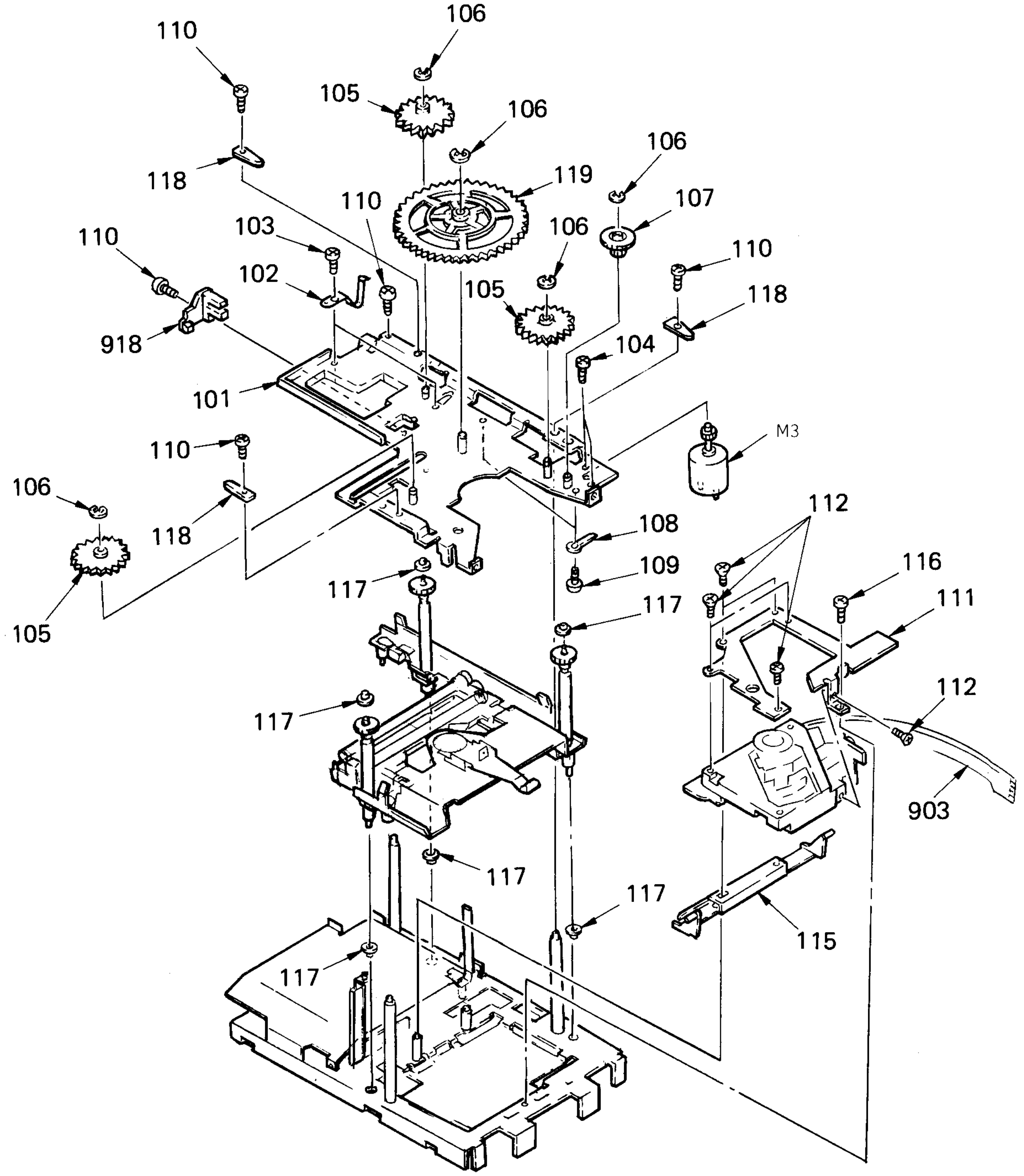
909
63

No.	Part No.	Description	Remarks
51	7-623-507-01	LUG, 2.6	
53	7-685-855-01	+BVTT 2X10 (S)	
54	3-329-536-01	ESCUTCHEON	
55	3-329-582-01	BUTTON, EJECT	
56	7-685-132-11	SCREW +P 2.6X5 TYPE2 NON-SLIT	
57	3-329-568-01	LEVER, PACK RETAINER	
58	3-329-569-01	ROLLER, PACK	
59	3-331-948-01	(US,Canadian)...DOOR, PACK	
	3-331-948-11	(AEP,E).........DOOR, PACK	
60	3-331-931-01	SPRING	
61	*3-331-928-01	SHAFT, PACK DOOR	
62	7-685-861-09	SCREW +BVTT 2.6X5 (S)	
63	7-621-770-67	SCREW +B 2.6X6	
64	3-329-534-01	SHEET, INSULATING	
65	*3-329-541-01	CHASSIS, UPPER	
66	3-703-108-11	SCREW (CLAW), S TIGHT +BV 3X6	
67	7-685-134-19	SCREW +P 2.6X8	
68	3-333-007-01	PLATE, SHIELD	
69	3-333-008-01	PLATE, SHIELD	
70	9-911-843-XX	CISION	
901	*A-3265-013-A	MOUNTED PCB, RF	
902	A-3260-358-A	MOUNTED PCB, MAIN	
908	1-618-053-11	JB FLEXIBLE BOARD	
909	1-618-054-11	SB FLEXIBLE BOARD	
917	*1-617-983-11	PC BOARD, EJ	
S908	1-570-504-11	SWITCH, MICRO (STOP)	

(3)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102
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918
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M3
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903
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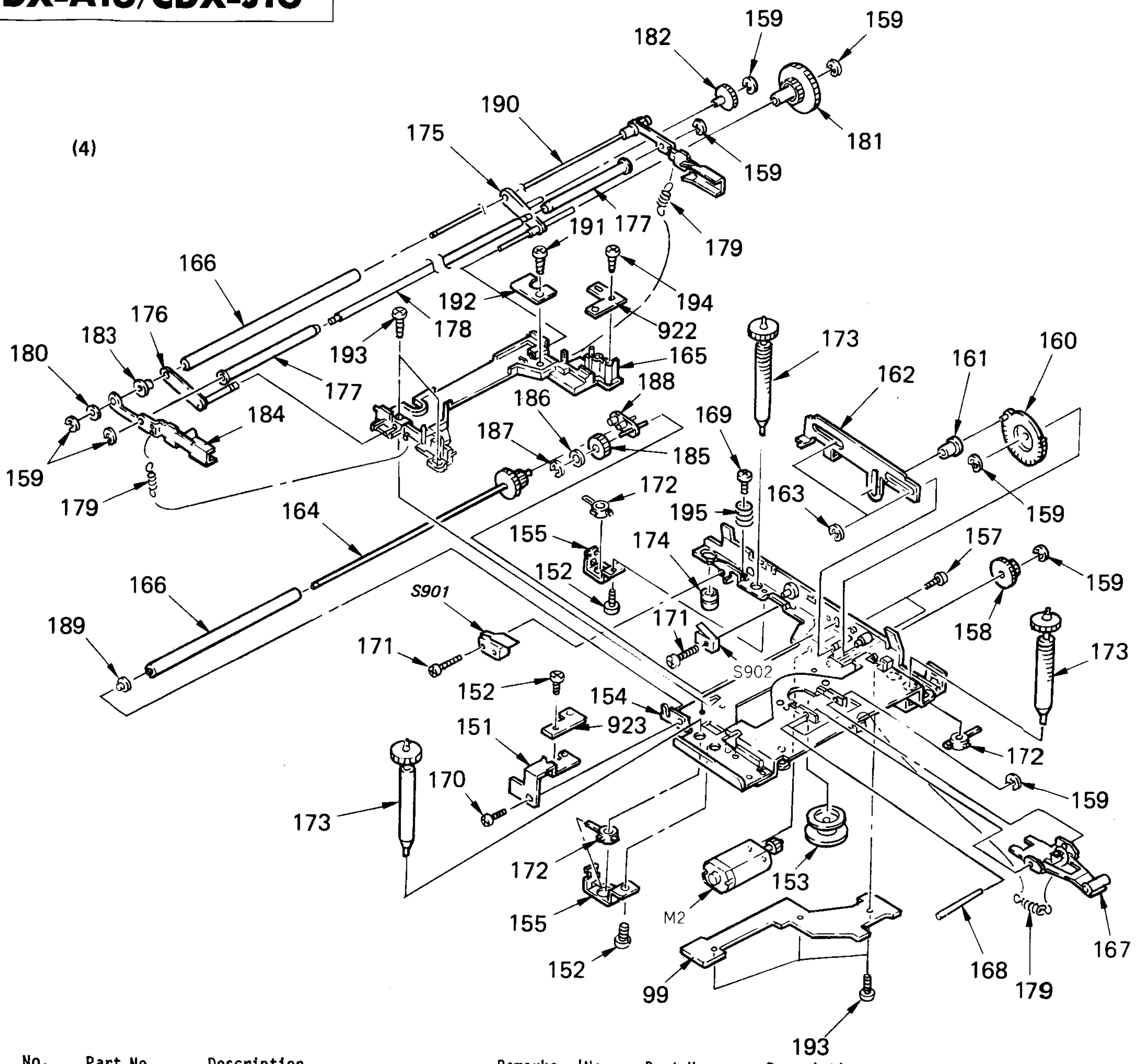
117

No.	Part No.	Description	Remarks
101	*X-3329-505-1	PLATE ASSY, TOP	
102	3-331-910-01	SPRING	
103	7-621-775-00	SCREW +B 2.6X3	
104	7-682-544-04	SCREW +P 3X3	
105	3-331-916-01	GEAR (MIDDLE), ELEVATOR	
106	7-624-118-04	RING, RETAINING E-2.5	
107	3-331-917-01	GEAR (SMALL), ELEVATOR	
108	*3-493-875-00	HOLDER, WIRE	
109	7-621-255-15	SCREW +P 2X3	
110	7-685-861-09	SCREW +BVTT 2.6X5	
111	*3-331-945-01	BRACKET, MD	
112	7-627-452-28	SCREW, PRECISION +K 2X4	
115	X-3329-525-1	OPENER ASSY, CHUCK	
116	7-685-781-04	SCREW +BVTT 2X4 (S)	
117	3-329-595-01	BEARING (UPPER&LOWER), POLY	
118	3-331-907-01	RETAINER, SCREW, FEED	
119	3-331-952-01	GEAR (LARGE), ELEVATOR	
903	1-617-756-11	PC BOARD, RF FLEXIBLE	
918	*1-617-989-11	PC BOARD, EHS	
M3	A-3239-495-A	M3 ASSY	

(4)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S901
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171
173
S902
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154
923
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170
173
159
172
153
155
M2
152
167
168
99
179
193

No.	Part No.	Description	Remarks
151	*3-331-908-01	BRACKET, PHOTO	
152	7-685-781-04	SCREW +BVTT 2X4 (S)	
153	A-3239-494-A	CHUCKING COMPLETE ASSY	
154	*X-3329-531-1	CHASSIS ASSY, E	
155	*3-329-570-01	PLATE, SCREW	
157	7-621-255-15	SCREW +P 2X3	
158	3-331-923-01	GEAR (B), ROLLER	
159	7-624-102-04	STOP RING 1.5, TYPE -E	
160	3-331-943-01	GEAR (F), R	
161	3-329-547-01	ROLLER, IDLE	
162	*3-331-944-01	LEVER, SLIDE	
163	7-624-104-04	STOP RING 2.0, TYPE -E	
164	X-3329-520-1	SHAFT (LOWER) ASSY, ROLLER	
165	X-3329-529-1	GUIDE (GENERAL) ASSY, DISK	
166	3-323-231-02	ROLLER (LOWER)	
167	3-331-946-01	BRACKET, DISK CHUCK	
168	*3-329-559-01	SHAFT, DISK CHUCK	
169	3-547-665-00	SPRING, TENSION	
170	7-621-772-40	SCREW, PRECISION +K 2X4	
171	7-685-855-01	+BVTT 2X10 (S)	
172	3-329-560-01	SCREW, M6	
173	X-3329-524-1	SCREW ASSY, FEED	
174	3-329-551-01	METAL (B), SHAFT	
175	X-3329-516-1	LEVER (B) ASSY, LINK	
176	*X-3329-517-1	LEVER (F) ASSY, LINK	
177	X-3329-518-1	ROLLER (UPPER) ASSY	
178	*3-329-552-01	SHAFT, SIDE ROLLER	
179	3-547-665-01	SPRING, TENSION	
180	3-534-411-01	WASHER (R)	
181	3-331-914-01	GEAR, ROLLER 3 STEP	
182	3-331-924-01	GEAR (G), ROLLER	
183	3-331-925-01	BEARING, ROLLER STOPPER	
184	*3-329-556-01	LINK, DISK	
185	3-329-555-01	GEAR (E), R	
186	3-329-553-01	SPRING, E	
187	3-321-813-11	WASHER, COTTER POLYETHYLENE	
188	*X-3329-522-1	LEVER ASSY, R	
189	3-329-558-01	BEARING, MAIN ROLLER	
190	X-3329-519-1	SHAFT (UPPER) ASSY, ROLLER	
191	7-621-770-67	SCREW +B 2.6X6	
192	*3-333-006-01	REINFORCEMENT	
193	7-685-861-09	SCREW +BVTT 2.6X5	
194	7-685-132-11	SCREW +TA 2.6X5	
195	3-354-512-01	SPRING, COMPRESSION	
919	1-617-995-11	PC BOARD, E	
922	*1-617-991-13	PC BOARD, DOE	
923	*1-617-990-12	PC BOARD, DPT	
M2	A-3239-493-A	M2 ASSY	
S901	1-570-503-11	SWITCH, MICRO (CBP)	
S902	1-570-502-11	SWITCH, MICRO (M1)	

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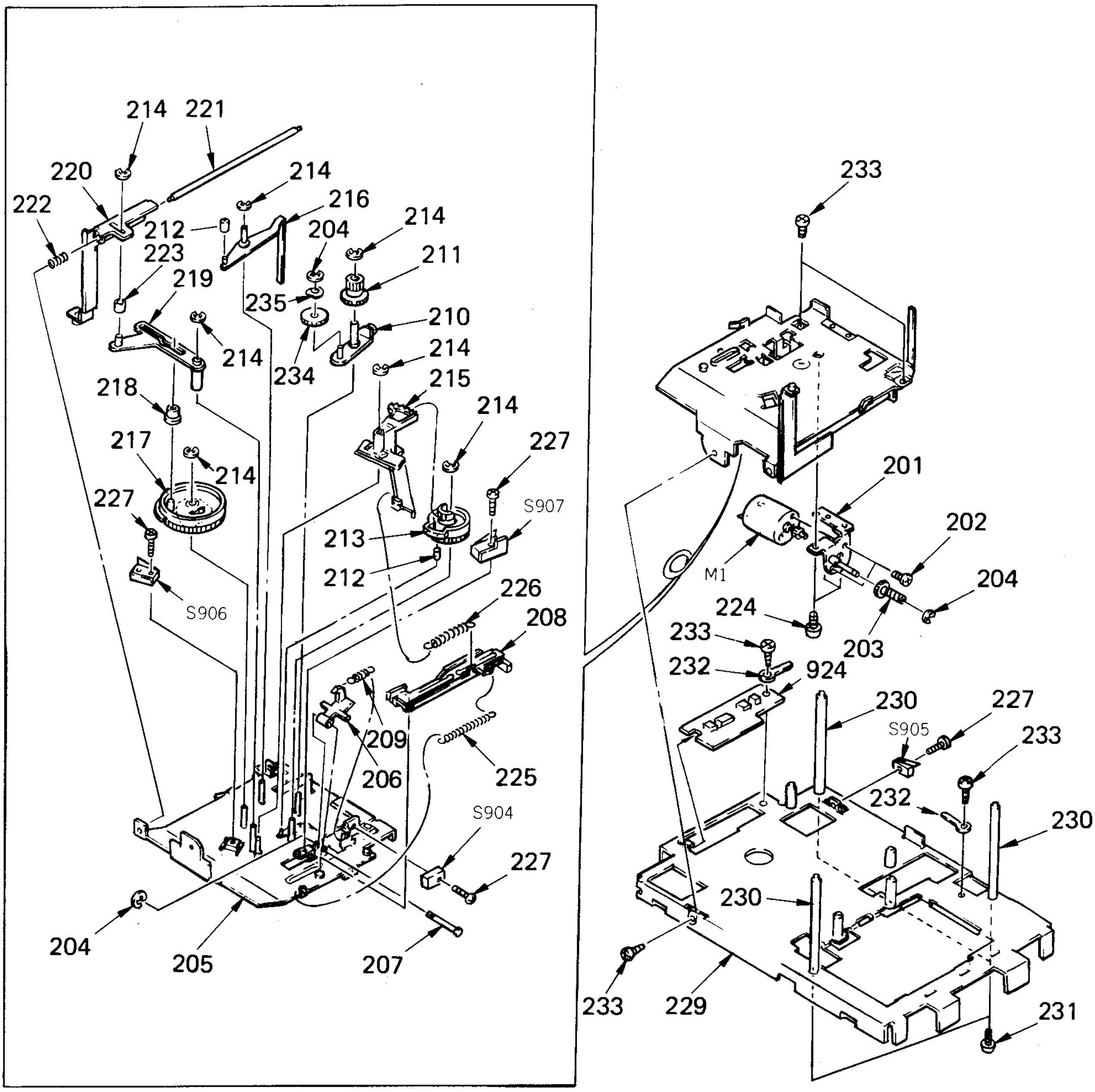
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No.	Part No.	Description	Remarks
201	*X-3329-502-1	PLATE ASSY, FIXED, MOTOR	
202	7-682-544-04	SCREW +P 3X3	
203	3-331-964-01	GEAR, WORM	
204	7-624-102-04	STOP RING 1.5, TYPE -E	
205	*X-3329-504-1	CHASSIS ASSY, PACK	
206	3-331-902-01	HOOK, PACK LOCK	
207	*3-329-573-01	SHAFT, LOCK HOOK	
208	*3-331-913-01	EJECTOR (2), SOFT	
209	3-535-369-XX	SPRING, TENSION	
210	*X-3329-509-1	LEVER ASSY	
211	3-329-590-01	WHEEL, WORM	
212	3-329-580-01	ROLLER, CAM	
213	3-331-951-01	GEAR (2), EJECT CAM	
214	7-624-104-04	STOP RING 2.0, TYPE -E	
215	X-3329-511-1	LEVER ASSY, SOFT EJECT	
216	*X-3329-510-1	LEVER ASSY, SLIDER SET	
217	X-3329-513-1	GEAR ASSY, CAM	
218	3-331-905-01	ROLLER (A)	
219	*X-3329-507-1	LEVER ASSY, LINEAR	
220	X-3329-515-1	SLIDER ASSY, LINEAR	
221	3-331-904-01	SHAFT, LINEAR SLIDER	
222	3-568-315-01	SPRING, COMPRESSION	
223	3-331-927-01	ROLLER, LINEAR LEVER	
224	7-621-255-15	SCREW +P 2X3	
225	3-634-191-XX	SPRING, TENSION	
226	3-551-022-00	SPRING, TENSION	
227	7-685-861-09	SPRING, TENSION	
229	*X-3329-503-1	CHASSIS ASSY, BOTTOM	
230	3-329-549-01	SHAFT, E FIXED	
231	7-682-546-09	SCREW +B 3X5	
232	3-701-822-00	HOLDER, WIRE	
234	3-329-591-01	GEAR	
233	7-685-861-09	SCREW +BVTT 2.6X5	
235	3-329-553-01	SPRING, E	
924	*1-617-984-12	PC BOARD, RL	
M1	A-3239-495-A	M3 ASSY	
S904	1-570-504-11	SWITCH, MICRO (PST)	
S905	1-570-504-11	SWITCH, MICRO (HOME)	
S906	1-570-504-11	SWITCH, MICRO (LOT)	
S907	1-570-504-11	SWITCH, MICRO (EJECT)	

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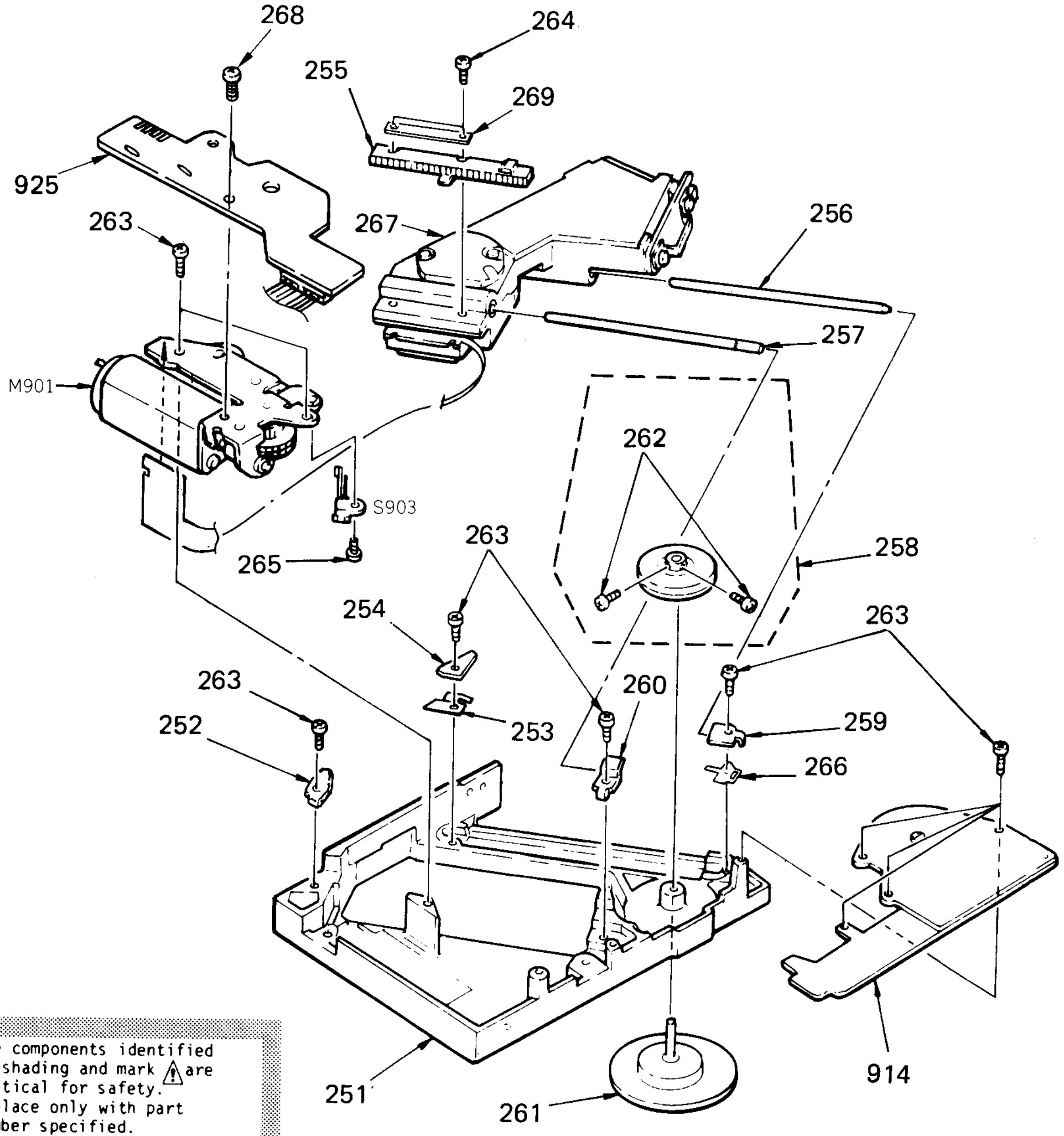

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

No.	Part No.	Description	Remarks
251	*X-3320-103-3	CHASSIS ASSY	
252	3-320-103-01	RETAINER (B)	
253	3-320-130-01	SPRING (A), LEAF	
254	3-320-104-01	RETAINER (C)	
255	3-320-121-01	RACK	
256	3-320-107-01	SHAFT (B)	
257	3-320-106-01	SHAFT (A)	
258	X-2622-803-1	ROTOR ASSY	
259	3-320-105-01	RETAINER (D)	
260	3-320-102-01	RETAINER (A)	
261	X-3320-101-1	TURNTABLE ASSY	

No.	Part No.	Description	Remarks
262	2-622-805-01	SCREW	
263	3-703-816-01	SCREW (M1.4X4)	
264	7-627-552-77	SCREW, PRECISION +P 1.7X6	
265	7-627-553-37	SCREW, PRECISION +P 2X3	
266	3-320-131-01	SPRING (B), LEAF	
267	⚠ X-3329-540-1	OPTICAL PICK-UP BLOCK	
268	7-685-851-01	SCREW +BVTT 2X4	
269	3-320-133-01	SPACER, RACK	
914	X-2622-801-1	PC BOARD ASSY, STATOR	
M901	X-3320-102-8	MOTOR ASSY, SLED	
S903	1-553-198-00	SWITCH, LEAF (SLED LIMIT)	

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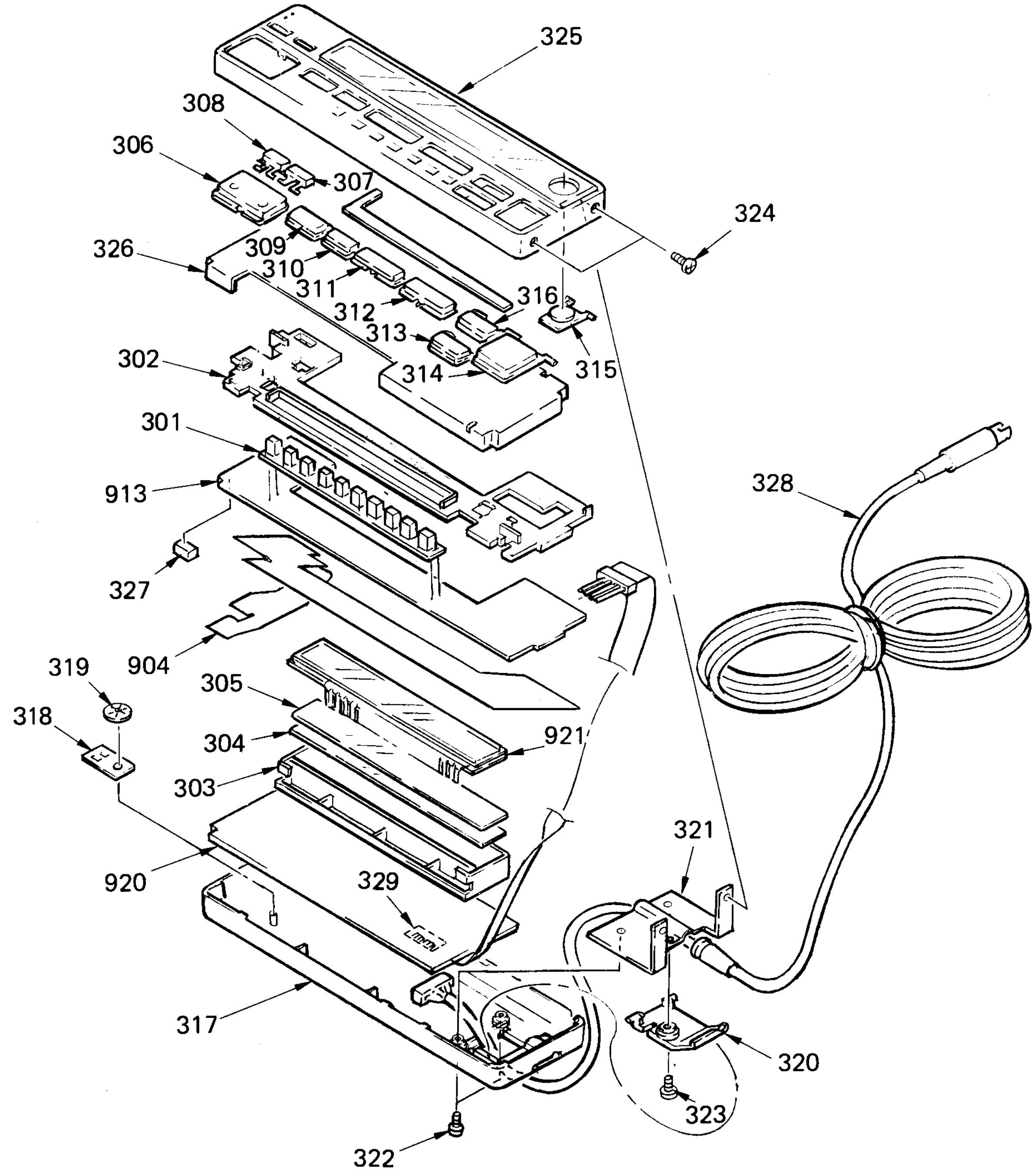
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No.	Part No.	Description	Remarks
301	3-329-518-01	RUBBER, CONTACT	
302	3-329-521-01	CHASSIS, MOLD	
303	3-329-511-01	PLATE, REFLECTION	
304	*3-329-513-01	PLATE, POLARIZATION	
305	*3-329-524-01	REFLECTOR	
306	3-329-504-01	BUTTON, VOL.	
307	3-329-505-01	PUSH BUTTON (A)(SELECT)	
308	3-329-505-11	PUSH BUTTON (A)(SE)	
309	3-329-506-01	BUTTON, MEM	
310	3-329-508-01	BUTTON, SENS RMS	
311	3-329-510-11	BUTTON (MANU), SEESAW	
312	3-329-510-01	BUTTON (SCAN), SEESAW	
313	3-329-507-01	PUSH BUTTON (B)(TUNER)	
314	3-329-509-01	BUTTON, PLAY	
315	X-3329-501-1	BUTTON ASSY, ALL OFF	
316	3-329-507-11	PUSH BUTTON (B)(PGM PLAY)	
317	3-329-520-01	CASE, REAR	
318	*3-329-515-01	BLACKET, HOOK	
319	4-303-605-00	NUT	
320	3-329-501-01	CLAMP, CORD	
321	*3-329-502-01	BRACKET, CORD	
322	7-627-553-68	SCREW, PRECISION +P 2X6	
323	7-621-773-95	SCREW +B 2.6X6	
324	7-627-553-38	SCREW, PRECISION +P 2X3	
325	X-3329-539-1	FRONT CASE ASSY	
326	*3-331-977-01	COVER, SHIELD	
327	9-911-840-XX	CUSHION	
328	X-3329-536-1	CORD ASSY, PLUG	
329	*1-506-587-11	PIN HEADER, ANGLE 9P	
904	1-617-350-11	PC BOARD, S.D FLEXIBLE	
913	*A-3281-321-A	MOUNTED PCB, SWITCH	
920	*1-617-349-11	PC BOARD, LCD	
921	1-807-318-11	L.C.D PANEL	

SECTION 6

ELECTRICAL PARTS LIST

NOTE:

- Items marked " ★ " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuitsin a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:
MF:μF, PF:μμF.

RESISTORS
- All resistors are in ohms.
- F : nonflammable

COILS
- MMH : mH, UH : μH

SEMICONDUCTORS
In each case, U : μ, for example:
UA...: μA..., UPA...: μPA..., UPC...: μPC, UPD...: μPD...

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
901	*A-3265-013-A	MOUNTED PCB, RF			
902	A-3260-358-A	MOUNTED PCB, MAIN			
903	1-617-756-11	PC BOARD, RF FLEXIBLE			
904	1-617-350-11	PC BOARD, S.D FLEXIBLE			
905	1-536-968-11	JACK BOARD			
906	*1-558-344-11	CORD (WITH CONNECTOR)			
907	1-532-360-XX	FUSE			
908	1-618-053-11	JB FLEXIBLE BOARD			
909	1-618-054-11	SB FLEXIBLE BOARD			
910	1-554-980-11	SWITCH, KEY BOARD			
911	1-563-140-11	SOCKET, CONNECTOR 9P			
912	1-563-141-11	CONNECTOR, F.P.C 8P			
913	*A-3281-321-A	MOUNTED PCB, SWITCH			
914	X-2622-801-1	PC BOARD ASSY, STATOR			
915	1-464-582-11	DC-DC CONVERTOR UNIT			
917	*1-617-983-11	PC BOARD, EJ			
918	*1-617-989-11	PC BOARD, EHS			
919	*1-617-995-11	PC BOARD, E			
920	*1-617-349-11	PC BOARD, LCD			
921	1-807-318-11	L.C.D PANEL			
922	*1-617-991-13	PC BOARD, DOE			
923	*1-617-990-12	PC BOARD, DPT			
924	*1-617-984-12	PC BOARD, RL			
925	*1-617-121-11	PC BOARD, AX-1 TRANSLATION			
927	1-464-582-12	CONVERTER UNIT, DC-DC			
C1	1-123-661-00	ELECT	100MF	20%	6.3V
C2	1-123-645-00	ELECT	33MF	20%	10V
C3	1-102-959-00	CERAMIC	22PF	5%	50V
C4	1-102-959-00	CERAMIC	22PF	5%	50V
C5	1-136-153-00	FILM	0.01MF	5%	50V
C6	1-136-159-00	FILM	0.033MF	5%	50V
C7	1-136-153-00	FILM	0.01MF	5%	50V
C8	1-123-607-00	ELECT	0.1MF	20%	50V
C9	1-123-609-00	ELECT	0.33MF	20%	50V
C10	1-136-159-00	FILM	0.033MF	5%	50V
C11	1-123-610-00	ELECT	0.47MF	20%	50V
C12	1-101-884-00	CERAMIC	56PF	5%	50V
C13	1-101-884-00	CERAMIC	56PF	5%	50V
C14	1-131-385-00	TANTALUM	22MF	20%	6.3V
C15	1-131-385-00	TANTALUM	22MF	20%	6.3V
C16	1-123-661-00	ELECT	100MF	20%	6.3V
C17	1-123-661-00	ELECT	100MF	20%	6.3V
C18	1-136-161-00	FILM	0.047MF	5%	50V
C19	1-123-617-00	ELECT	10MF	20%	16V
C20	1-123-661-00	ELECT	100MF	20%	6.3V
C21	1-123-661-00	ELECT	100MF	20%	6.3V
C22	1-123-661-00	ELECT	100MF	20%	6.3V
C23	1-102-121-00	CERAMIC	0.0022MF	10%	50V
C24	1-102-121-00	CERAMIC	0.0022MF	10%	50V
C25	1-102-121-00	CERAMIC	0.0022MF	10%	50V
C26	1-102-973-00	CERAMIC	100PF	5%	50V
C27	1-123-607-00	ELECT	0.1MF	20%	50V
C28	1-136-164-00	FILM	0.082MF	5%	50V
C29	1-102-947-00	CERAMIC	10PF	5%	50V
C30	1-123-612-00	ELECT	2.2MF	20%	50V
C31	1-136-162-00	FILM	0.056MF	5%	50V
C32	1-102-973-00	CERAMIC	100PF	5%	50V
C33	1-130-474-00	MYLAR	0.0018MF	5%	50V
C34	1-130-477-00	MYLAR	0.0033MF	5%	50V
C35	1-123-611-00	ELECT	1MF	20%	50V
C36	1-130-479-00	MYLAR	0.0047MF	5%	50V
C37	1-130-475-00	MYLAR	0.0022MF	5%	50V
C38	1-123-661-00	ELECT	100MF	20%	6.3V
C39	1-136-153-00	FILM	0.01MF	5%	50V
C40	1-130-479-00	MYLAR	0.0047MF	5%	50V
C41	1-123-611-00	ELECT	1MF	20%	50V
C42	1-131-341-00	TANTALUM	0.1MF	20%	35V
C101	1-163-209-00	CERAMIC CHIP	0.0015MF	5%	50V
C102	1-124-229-00	ELECT	33MF	20%	10V
C103	1-124-229-00	ELECT	33MF	20%	10V
C104	1-163-189-00	CERAMIC CHIP	220PF	5%	50V
C105	1-163-333-91	CERAMIC CHIP	820PF	5%	50V
C106	1-163-333-91	CERAMIC CHIP	820PF	5%	50V
C107	1-163-055-00	CERAMIC CHIP	0.0047MF	10%	50V
C108	1-124-257-00	ELECT	2.2MF	20%	50V
C109	1-124-233-00	ELECT	10MF	20%	16V
C110	1-124-233-00	ELECT	10MF	20%	16V
C112	1-124-233-00	ELECT	10MF	20%	16V
C113	1-124-233-00	ELECT	10MF	20%	16V
C114	1-163-058-00	CERAMIC CHIP	0.0082MF	10%	50V
C115	1-136-165-00	FILM	0.1MF	5%	50V
C116	1-136-165-00	FILM	0.1MF	5%	50V
C117	1-124-245-00	ELECT	4.7MF	20%	25V
C118	1-124-245-00	ELECT	4.7MF	20%	25V
C119	1-124-229-00	ELECT	33MF	20%	10V
C120	1-124-229-00	ELECT	33MF	20%	10V
C121	1-124-229-00	ELECT	33MF	20%	10V
C122	1-124-233-00	ELECT	10MF	20%	16V
C123	1-163-169-00	CERAMIC CHIP	33PF	5%	50V
C124	1-124-233-00	ELECT	10MF	20%	16V
C125	1-124-229-00	ELECT	33MF	20%	10V

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
C126	1-124-229-00	ELECT	33MF	20%	10V
C130	1-124-233-00	ELECT	10MF	20%	16V
C131	1-124-233-00	ELECT	10MF	20%	10V
C132	1-124-229-00	ELECT	33MF	20%	10V
C133	1-163-189-00	CERAMIC CHIP	220PF	5%	50V
C134	1-124-233-00	ELECT	10MF	20%	16V
C135	1-163-205-00	CERAMIC CHIP	0.001MF	10%	50V
C136	1-163-063-00	CERAMIC CHIP	0.022MF	10%	50V
C201	1-163-209-00	CERAMIC CHIP	0.0015MF	5%	50V
C204	1-163-189-00	CERAMIC CHIP	220PF	5%	50V
C205	1-163-333-91	CERAMIC CHIP	820PF	5%	50V
C206	1-163-333-91	CERAMIC CHIP	820PF	5%	50V
C207	1-163-055-00	CERAMIC CHIP	0.0047MF	10%	50V
C209	1-124-233-00	ELECT	10MF	20%	16V
C210	1-124-233-00	ELECT	10MF	20%	16V
C212	1-124-233-00	ELECT	10MF	20%	16V
C213	1-124-233-00	ELECT	10MF	20%	16V
C214	1-163-058-00	CERAMIC CHIP	0.0082MF	10%	50V
C215	1-136-165-00	FILM	0.1MF	5%	50V
C216	1-136-165-00	FILM	0.1MF	5%	50V
C217	1-124-245-00	ELECT	4.7MF	20%	25V
C218	1-124-245-00	ELECT	4.7MF	20%	25V
C219	1-124-229-00	ELECT	33MF	20%	10V
C220	1-124-229-00	ELECT	33MF	20%	10V
C221	1-124-229-00	ELECT	33MF	20%	10V
C222	1-124-233-00	ELECT	10MF	20%	16V
C223	1-163-169-00	CERAMIC CHIP	33PF	5%	50V
C224	1-124-233-00	ELECT	10MF	20%	16V
C225	1-124-229-00	ELECT	33MF	20%	10V
C226	1-124-229-00	ELECT	33MF	20%	10V
C230	1-124-233-00	ELECT	10MF	20%	16V
C231	1-124-233-00	ELECT	10MF	20%	10V
C232	1-124-229-00	ELECT	33MF	20%	10V
C233	1-163-189-00	CERAMIC CHIP	220PF	5%	50V
C234	1-124-233-00	ELECT	10MF	20%	16V
C235	1-163-205-00	CERAMIC CHIP	0.001MF	10%	50V
C236	1-163-063-00	CERAMIC CHIP	0.022MF	10%	50V
C301	1-124-229-00	ELECT	33MF	20%	10V
C302	1-124-229-00	ELECT	33MF	20%	10V
C305	1-124-229-00	ELECT	33MF	20%	10V
C306	1-124-229-00	ELECT	33MF	20%	10V
C307	1-163-305-91	CERAMIC CHIP	56PF	5%	50V
C308	1-124-245-00	ELECT	4.7MF	20%	25V
C309	1-124-236-00	ELECT	47MF	20%	16V
C310	1-124-229-00	ELECT	33MF	20%	10V
C311	1-124-229-00	ELECT	33MF	20%	10V
C314	1-124-229-00	ELECT	33MF	20%	10V
C315	1-124-229-00	ELECT	33MF	20%	10V
C316	1-124-249-00	ELECT	0.1MF	20%	50V
C317	1-124-229-00	ELECT	33MF	20%	10V
C318	1-124-229-00	ELECT	33MF	20%	10V
C320	1-124-229-00	ELECT	33MF	20%	10V
C321	1-163-287-91	CERAMIC CHIP	10PF	5%	50V
C322	1-124-233-00	ELECT	10MF	20%	16V
C323	1-163-169-00	CERAMIC CHIP	33PF	5%	50V
C324	1-124-233-00	ELECT	10MF	20%	16V
C325	1-124-229-00	ELECT	33MF	20%	10V

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
C326	1-124-229-00	ELECT	33MF	20%	10V
C501	1-136-162-00	MYLAR	0.056MF	5%	50V
C502	1-163-061-00	CERAMIC CHIP	0.015MF	10%	50V
C503	1-163-058-00	CERAMIC CHIP	0.0082MF	10%	50V
C504	1-124-222-00	ELECT	22MF	20%	6.3V
C505	1-163-205-00	CERAMIC CHIP	0.001MF	10%	50V
C506	1-163-299-00	CERAMIC CHIP	33PF	5%	50V
C507	1-163-311-11	CERAMIC CHIP	100PF	5%	50V
C508	1-163-654-91	CERAMIC CHIP	39PF	5%	50V
C509	1-163-213-00	CERAMIC CHIP	0.0022MF	10%	50V
C510	1-124-225-00	ELECT	100MF	20%	6.3V
C511	1-163-213-00	CERAMIC CHIP	0.0022MF	10%	50V
C512	1-163-059-00	CERAMIC CHIP	0.01MF	10%	50V
C515	1-163-045-91	CERAMIC CHIP	680PF	10%	50V
C516	1-163-169-00	CERAMIC CHIP	33PF	5%	50V
C517	1-163-169-00	CERAMIC CHIP	33PF	5%	50V
C518	1-124-229-00	ELECT	33MF	20%	10V
C519	1-124-257-00	ELECT	2.2MF	20%	50V
C520	1-163-063-00	CERAMIC CHIP	0.022MF	10%	50V
C521	1-124-249-00	ELECT	0.1MF	20%	50V
C522	1-124-229-00	ELECT	33MF	20%	10V
C523	1-163-061-00	CERAMIC CHIP	0.015MF	10%	50V
C524	1-163-287-91	CERAMIC CHIP	10PF	5%	50V
C525	1-124-245-00	ELECT	4.7MF	20%	25V
C526	1-124-245-00	ELECT	4.7MF	20%	25V
C528	1-125-333-00	DOUBLE LAYERS	22000MF		5.5V
C529	1-136-165-00	FILM	0.1MF	5%	50V
C530	1-136-165-00	FILM	0.1MF	5%	50V
C531	1-163-063-00	CERAMIC CHIP	0.022MF	10%	50V
C532	1-163-063-00	CERAMIC CHIP	0.022MF	10%	50V
C533	1-124-249-00	ELECT	0.1MF	20%	50V
C534	1-136-165-00	FILM	0.1MF	5%	50V
C535	1-136-165-00	FILM	0.1MF	5%	50V
C536	1-136-165-00	FILM	0.1MF	5%	50V
C537	1-136-165-00	FILM	0.1MF	5%	50V
C538	1-124-229-00	ELECT	33MF	20%	10V
C539	1-124-229-00	ELECT	33MF	20%	10V
C540	1-124-229-00	ELECT	33MF	20%	10V
C541	1-124-229-00	ELECT	33MF	20%	10V
C542	1-124-229-00	ELECT	33MF	20%	10V
C543	1-124-229-00	ELECT	33MF	20%	10V
C545	1-124-229-00	ELECT	33MF	20%	10V
C546	1-124-229-00	ELECT	33MF	20%	10V
C547	1-124-229-00	ELECT	33MF	20%	10V
C548	1-124-229-00	ELECT	33MF	20%	10V
C549	1-124-229-00	ELECT	33MF	20%	10V
C551	1-124-229-00	ELECT	33MF	20%	10V
C552	1-163-169-00	CERAMIC CHIP	33PF	5%	50V
C553	1-163-059-00	CERAMIC CHIP	0.01MF	10%	50V
C554	1-124-229-00	ELECT	33MF	20%	10V
C555	1-163-165-00	CERAMIC CHIP	22PF	5%	50V
C556	1-124-257-00	ELECT	2.2MF	20%	50V
C557	1-163-059-00	CERAMIC CHIP	0.01MF	10%	50V
C559	1-124-442-00	ELECT	330MF	20%	6.3V
C560	1-124-442-00	ELECT	330MF	20%	6.3V
C561	1-124-225-00	ELECT	100MF	20%	6.3V
C562	1-163-205-00	CERAMIC CHIP	0.001MF	10%	50V

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
C563	1-163-311-11	CERAMIC CHIP	100PF	5%	50V
C564	1-163-059-00	CERAMIC CHIP	0.01MF	10%	50V
C565	1-163-059-00	CERAMIC CHIP	0.01MF	10%	50V
C566	1-163-063-00	CERAMIC CHIP	0.022MF	10%	50V
C567	1-124-257-00	ELECT	2.2MF	20%	50V
C568	1-124-233-00	ELECT	10MF	20%	10V
C569	1-163-059-00	CERAMIC CHIP	0.01MF	10%	50V
C570	1-163-059-00	CERAMIC CHIP	0.01MF	10%	50V
C801	1-161-055-00	CERAMIC	0.022MF	10%	50V
C802	1-124-236-00	ELECT	47MF	20%	10V
C803	1-124-249-00	ELECT	0.1MF	20%	50V
C804	1-102-959-00	CERAMIC	27PF	5%	50V
C805	1-161-039-00	CERAMIC	0.001MF	10%	50V
C806	1-161-039-00	CERAMIC	0.001MF	10%	50V
C807	1-161-055-00	CERAMIC	0.022MF	10%	50V
C808	1-124-236-00	ELECT	47MF	20%	10V
C809	1-101-880-00	CERAMIC	47MF	5%	50V
C810	1-101-880-00	CERAMIC	47MF	5%	50V
C1001	1-123-335-00	ELECT	330MF	20%	25V
C1002	1-123-380-00	ELECT	1MF	20%	50V
C1003	1-108-587-00	PE TEREPHTHALATE	0.022MF	5%	50V
C1004	1-106-172-00	PE TEREPHTHALATE	0.001MF	5%	50V
C1005	1-102-106-00	CERAMIC	100PF	10%	50V
C1006	1-106-172-00	PE TEREPHTHALATE	0.001MF	5%	50V
C1007	1-102-106-00	CERAMIC	100PF	10%	50V
C1008	1-108-587-00	PE TEREPHTHALATE	0.022MF	5%	50V
C1009	1-123-379-00	ELECT	0.47MF		50V
C1010	1-123-379-00	ELECT	0.47MF	20%	50V
C1101	1-123-310-00	ELECT	470MF	20%	10V
C1102	1-123-310-00	ELECT	470MF	20%	10V
C1201	1-123-310-00	ELECT	470MF	20%	10V
C1202	1-123-310-00	ELECT	470MF	20%	10V
CN1001	1-506-686-11	CONNECTOR 7P			
CN1002	1-506-685-11	CONNECTOR 9P			
CNP1	*1-564-708-11	PIN, CONNECTOR (SMALL TYPE) 6P			
CNP2	*1-564-704-11	PIN, CONNECTOR (SMALL TYPE) 2P			
CNP3	*1-562-882-11	SOCKET, CONNECTOR 12P			
CNP4	*1-564-708-11	PIN, CONNECTOR (SMALL TYPE) 6P			
CNP5	*1-564-705-11	PIN, CONNECTOR (SMALL TYPE) 3P			
CNP6	1-564-711-11	PIN, CONNECTOR (SMALL TYPE) 9P			
CNP7	*1-564-704-11	PIN, CONNECTOR (SMALL TYPE) 2P			
CNP8	*1-564-704-31	PIN, CONNECTOR (SMALL TYPE) 2P			
CNP9	*1-564-707-11	PIN, CONNECTOR (SMALL TYPE) 5P			
CNP10	*1-564-707-11	PIN, CONNECTOR (SMALL TYPE) 5P			
CNP501	*1-564-708-11	PIN, CONNECTOR (SMALL TYPE) 6P			
CNP504	*1-564-724-11	PIN, CONNECTOR (SMALL TYPE) 8P			
CNP507	*1-564-719-11	PIN, CONNECTOR (SMALL TYPE) 3P			
CNP508	1-562-886-11	CONNECTOR, F.P.C 12P			
CNP510	*1-564-722-11	PIN, CONNECTOR (SMALL TYPE) 6P			
CNP512	*1-564-725-11	PIN, CONNECTOR (SMALL TYPE) 9P			
CNP513	*1-564-719-11	PIN, CONNECTOR (SMALL TYPE) 3P			
CNP514	*1-564-720-11	PIN, CONNECTOR (SMALL TYPE) 4P			
CNP517	*1-564-721-11	PIN, CONNECTOR (SMALL TYPE) 5P			
CNP518	*1-564-719-11	PIN, CONNECTOR (SMALL TYPE) 3P			
CNP601	*1-564-706-11	PIN, CONNECTOR (SMALL TYPE) 4P			
CNP602	*1-564-705-11	PIN, CONNECTOR (SMALL TYPE) 3P			
CNP603	*1-564-721-11	PIN, CONNECTOR (SMALL TYPE) 5P			

ELECTRICAL PARTS

Ref.No.	Part No.	Description
D1	8-719-921-11	DIODE HZ2ALL
D2	8-719-911-06	DIODE 1SS106
D3	8-719-911-06	DIODE 1SS106
D4	8-719-911-06	DIODE 1SS106
D5	8-719-951-13	DIODE HZ5CLL
D6	8-719-911-19	DIODE 1SS119
D301	8-719-100-29	DIODE RD5.1EB1
D302	8-719-100-26	DIODE RD4.7EB1
D303	8-719-801-48	DIODE 1SS193
D304	8-719-801-48	DIODE 1SS193
D305	8-719-801-48	DIODE 1SS193
D401	8-719-812-31	DIODE TLR123-C
D402	8-719-812-31	DIODE TLR123-C
D403	8-719-812-31	DIODE TLR123-C
D501	8-719-911-06	DIODE 1SS106
D502	8-719-902-79	DIODE KV1236Z
D503	8-719-921-11	DIODE HZ2ALL
D504	8-719-921-11	DIODE HZ2ALL
D505	8-719-801-48	DIODE 1SS193
D506	8-719-801-48	DIODE 1SS193
D507	8-719-801-48	DIODE 1SS193
D509	8-719-801-48	DIODE 1SS193
D510	8-719-801-48	DIODE 1SS193
D511	8-719-911-19	DIODE 1SS119
D512	8-719-911-19	DIODE 1SS119
D513	8-719-801-48	DIODE 1SS193
D514	8-719-801-48	DIODE 1SS193
D515	8-719-100-29	DIODE RD5.1EB1
D516	8-719-910-63	DIODE HZ6A3L
D517	8-719-910-63	DIODE HZ6A3L
D518	8-719-911-19	DIODE 1SS119
D520	8-719-910-63	DIODE HZ6A3L
D522	8-719-100-67	DIODE RD13EB1
D523	8-719-100-67	DIODE RD13EB1
D524	8-719-100-67	DIODE RD13EB1
D525	8-719-100-03	DIODE 1S2835
D526	8-719-100-03	DIODE 1S2835
D529	8-719-100-05	DIODE 1S2837
D531	8-719-911-19	DIODE 1SS119
D533	8-729-100-58	DIODE RD10EB3
D534	8-719-801-48	DIODE 1SS193
D541	8-719-100-50	DIODE RD9.1EB1
D544	8-719-910-63	DIODE HZ6A3L
D546	8-719-911-19	DIODE 1SS119
D548	8-719-100-05	DIODE 1S2837
D550	8-719-801-48	DIODE 1SS193
D552	8-719-991-19	DIODE 1SS119
D801	8-719-936-78	DIODE GL9HY44
D802	8-719-936-78	DIODE GL9HY44
D803	8-719-936-78	DIODE GL9HY44
D804	8-719-936-78	DIODE GL9HY44
D805	8-719-936-78	DIODE GL9HY44
D806	8-719-936-78	DIODE GL9HY44
D807	8-719-936-78	DIODE GL9HY44
D808	8-719-936-78	DIODE GL9HY44
D809	8-719-936-78	DIODE GL9HY44
D810	8-719-936-78	DIODE GL9HY44

ELECTRICAL PARTS

Ref.No.	Part No.	Description
D811	8-719-936-78	DIODE GL9HY44
D812	8-719-936-78	DIODE GL9HY44
D813	8-719-927-82	DIODE SLP478C
D814	8-719-927-82	DIODE SLP478C
D815	8-719-927-82	DIODE SLP478C
D816	8-719-927-82	DIODE SLP478C
D817	8-719-927-82	DIODE SLP478C
D818	8-719-927-82	DIODE SLP478C
D819	8-719-927-82	DIODE SLP478C
D820	8-719-927-82	DIODE SLP478C
D821	8-719-927-82	DIODE SLP478C
D822	8-719-927-82	DIODE SLP478C
D823	8-719-927-82	DIODE SLP478C
D824	8-719-936-78	DIODE GL9HY44
D825	8-719-936-78	DIODE GL9HY44
D826	8-719-936-94	DIODE GL-9EG44
D827	8-719-936-78	DIODE GL9HY44
D828	8-719-936-78	DIODE GL9HY44
D829	8-719-936-78	DIODE GL9HY44
D830	8-719-936-78	DIODE GL9HY44
D831	8-719-936-78	DIODE GL9HY44
D832	8-719-936-78	DIODE GL9HY44
D833	8-719-936-78	DIODE GL9HY44
D834	8-719-936-78	DIODE GL9HY44
D835	8-719-936-78	DIODE GL9HY44
D836	8-719-936-78	DIODE GL9HY44
D837	8-719-936-78	DIODE GL9HY44
D838	8-719-936-78	DIODE GL9HY44
D839	8-719-936-78	DIODE GL9HY44
D840	8-719-936-78	DIODE GL9HY44
D841	8-719-936-78	DIODE GL9HY44
D842	8-719-936-78	DIODE GL9HY44
D843	8-719-936-78	DIODE GL9HY44
D844	8-719-936-78	DIODE GL9HY44
D845	8-719-936-78	DIODE GL9HY44
D846	8-719-936-78	DIODE GL9HY44
D847	8-719-936-78	DIODE GL9HY44
D848	8-719-936-78	DIODE GL9HY44
D849	8-719-936-78	DIODE GL9HY44
D850	8-719-936-78	DIODE GL9HY44
D851	8-719-911-19	DIODE 1SS119
D852	8-719-911-19	DIODE 1SS119
D853	8-719-911-19	DIODE 1SS119
D854	8-719-911-19	DIODE 1SS119
D855	8-719-911-19	DIODE 1SS119
D856	8-719-911-19	DIODE 1SS119
D857	8-719-911-19	DIODE 1SS119
D858	8-719-911-19	DIODE 1SS119
D859	8-719-936-78	DIODE GL9HY44
D1001	8-719-920-04	DIODE ERB12-01PK
D1101	8-719-982-04	DIODE ERB81-004
D1201	8-719-982-04	DIODE ERB81-004
D1303	8-719-920-04	DIODE ERB12-01PK
D1304	8-719-920-04	DIODE ERB12-01PK
F1001	1-532-360-XX	FUSE (1A)
F1002	1-532-360-XX	FUSE (1A)
F1003	1-532-360-XX	FUSE (1A)

ELECTRICAL PARTS

Ref.No.	Part No.	Description
FL1	1-235-778-11	FILTER, LOW PASS
FL2	1-235-778-11	FILTER, LOW PASS
IC1	8-752-010-90	IC CX20109
IC2	8-759-145-58	IC UPC4558C
IC3	8-752-010-80	IC CX20108
IC101	8-759-103-09	IC UPC4082G2
IC102	8-759-603-13	IC M5218FP
IC103	8-759-603-13	IC M5218FP
IC201	8-759-103-09	IC UPC4082G2
IC202	8-759-603-13	IC M5218FP
IC203	8-759-603-13	IC M5218FP
IC301	8-752-013-30	IC CX20133
IC302	8-759-603-13	IC M5218FP
IC303	8-759-802-31	IC LC7537
IC304	8-759-200-81	IC TC4053BF
IC305	8-759-100-08	IC UPC1571C
IC306	8-759-603-13	IC M5218FP
IC307	8-759-603-13	IC M5218FP
IC501	8-759-912-52	IC CX23035
IC502	8-759-302-69	IC HM6116LFP-3
IC503	8-759-107-83	IC UPD7508HC-069
IC504	8-759-918-47	IC MB88501-299M
IC505	8-759-913-06	IC BA6209
IC506	8-759-802-32	IC LB1649
IC507	8-757-991-00	IC CX-7991
IC508	8-759-905-45	IC MB3761
IC509	8-759-103-09	IC UPC4082G2
IC510	8-759-201-01	IC TC4066BF
IC511	8-759-201-01	IC TC4066BF
IC512	8-759-108-05	IC UPC78L05A
IC801	8-759-107-80	IC UPD7503G-411
IC802	8-759-102-82	IC UPD82C43G
IC804	8-759-200-82	IC TC4069UBF
IC805	8-759-200-80	IC TC4050BF
IC1001	8-759-908-95	IC TL1451ACN
L301	1-433-292-11	TRANSFORMER, OSCILLATION
L501	1-406-120-11	COIL
L502	1-408-209-00	MICRO INDUCTOR 1MMH
L503	1-408-209-00	MICRO INDUCTOR 1MMH
L1101	1-421-853-11	COIL, CHOKE 250UH
L1102	1-421-462-00	COIL, CHOKE 10UH
L1202	1-421-852-11	COIL, CHOKE 15UH
L1201	1-421-853-11	COIL, CHOKE 250UH
M1	A-3239-495-A	M3 ASSY
M2	A-3239-493-A	M2 ASSY
M3	A-3239-495-A	M3 ASSY
M901	X-3320-102-1	MOTOR ASSY
Q1	8-729-102-03	TRANSISTOR 2SD1020
Q2	8-729-102-03	TRANSISTOR 2SD1020
Q3	8-729-102-03	TRANSISTOR 2SD1020
Q4	8-729-102-03	TRANSISTOR 2SD1020
Q5	8-729-900-36	TRANSISTOR DTC124ES
Q6	8-729-900-63	TRANSISTOR DTA124ES
Q7	8-729-982-22	TRANSISTOR 2SB822
Q8	8-729-905-52	TRANSISTOR 2SD1055
Q9	8-729-982-22	TRANSISTOR 2SB822

ELECTRICAL PARTS

Ref.No.	Part No.	Description
Q10	8-729-905-52	TRANSISTOR 2SD1055
Q11	8-729-982-22	TRANSISTOR 2SB822
Q12	8-729-905-52	TRANSISTOR 2SD1055
Q13	8-729-982-22	TRANSISTOR 2SB822
Q14	8-729-117-54	TRANSISTOR 2SA1175
Q101	8-729-800-44	TRANSISTOR 2SK152-4
Q102	8-729-201-04	TRANSISTOR 2SC2878
Q103	8-729-201-04	TRANSISTOR 2SC2878
Q104	8-729-201-04	TRANSISTOR 2SC2878
Q201	8-729-800-44	TRANSISTOR 2SK152-4
Q202	8-729-201-04	TRANSISTOR 2SC2878
Q203	8-729-201-04	TRANSISTOR 2SC2878
Q204	8-729-201-04	TRANSISTOR 2SC2878
Q301	8-729-271-22	TRANSISTOR 2SC2712G
Q302	8-729-271-22	TRANSISTOR 2SC2712G
Q303	8-729-201-04	TRANSISTOR 2SC2878
Q304	8-729-901-00	TRANSISTOR DTC124EK
Q401	8-729-110-21	TRANSISTOR PH102-L
Q402	8-729-110-21	TRANSISTOR PH102-L
Q403	8-729-906-43	TRANSISTOR GP1S03
Q502	8-729-100-76	TRANSISTOR 2SA812
Q503	8-729-901-05	TRANSISTOR DTA124EK
Q504	8-729-901-05	TRANSISTOR DTA124EK
Q505	8-729-901-05	TRANSISTOR DTA124EK
Q506	8-729-100-76	TRANSISTOR 2SA812
Q507	8-729-100-76	TRANSISTOR 2SA812
Q508	8-729-901-00	TRANSISTOR DTC124EK
Q509	8-729-271-22	TRANSISTOR 2SC2712G
Q510	8-729-271-22	TRANSISTOR 2SC2712G
Q511	8-729-271-22	TRANSISTOR 2SC2712G
Q512	8-729-271-22	TRANSISTOR 2SC2712G
Q513	8-729-100-76	TRANSISTOR 2SA812
Q514	8-729-271-22	TRANSISTOR 2SC2712G
Q515	8-729-271-22	TRANSISTOR 2SC2712G
Q518	8-729-901-05	TRANSISTOR DTA124EK
Q519	8-729-901-05	TRANSISTOR DTA124EK
Q520	8-729-901-00	TRANSISTOR DTC124EK
Q521	8-729-901-00	TRANSISTOR DTC124EK
Q524	8-729-901-05	TRANSISTOR DTA124EK
Q525	8-729-901-00	TRANSISTOR DTC124EK
Q526	8-729-307-72	TRANSISTOR 2SD1077L
Q527	8-729-303-01	TRANSISTOR 2SB837L-B
Q528	8-729-303-01	TRANSISTOR 2SB837L-B
Q529	8-729-901-00	TRANSISTOR DTC124EK
Q530	8-729-271-22	TRANSISTOR 2SC2712G
Q531	8-729-303-06	TRANSISTOR 2SD1077-B
Q532	8-729-271-22	TRANSISTOR 2SC2712G
Q533	8-729-901-00	TRANSISTOR DTC124EK
Q534	8-729-901-05	TRANSISTOR DTA124EK
Q535	8-729-271-22	TRANSISTOR 2SC2712G
Q536	8-729-901-00	TRANSISTOR DTC144EK
Q537	8-729-901-00	TRANSISTOR DTC124EK
Q538	8-729-901-00	TRANSISTOR DTC124EK
Q540	8-729-271-22	TRANSISTOR 2SC2712G
Q541	8-729-905-52	TRANSISTOR 2SD1055
Q542	8-729-901-00	TRANSISTOR DTC124EK
Q543	8-729-307-72	TRANSISTOR 2SD1077L
Q544	8-729-901-00	TRANSISTOR DTC124EK

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
Q545	8-729-178-54	TRANSISTOR 2SC2785			
Q546	8-729-178-54	TRANSISTOR 2SC2785			
Q801	8-729-102-03	TRANSISTOR 2SD1020			
Q802	8-729-900-36	TRANSISTOR DTC124ES			
Q803	8-729-900-36	TRANSISTOR DTC124ES			
Q804	8-729-900-36	TRANSISTOR DTC124ES			
Q805	8-729-900-36	TRANSISTOR DTC124ES			
Q806	8-729-102-03	TRANSISTOR 2SD1020			
Q807	8-729-900-36	TRANSISTOR DTC124ES			
Q808	8-729-900-36	TRANSISTOR DTC124ES			
Q1001	8-729-201-52	TRANSISTOR 2SA1015-O			
Q1002	8-729-900-36	TRANSISTOR DTC124ES			
Q1101	8-729-206-11	TRANSISTOR 2SA1244-O			
Q1201	8-729-206-11	TRANSISTOR 2SA1244-O			
Q1202	8-729-201-52	TRANSISTOR 2SA1015-O			
Q1301	8-729-303-01	TRANSISTOR 2SB837L			
Q1302	8-729-900-80	TRANSISTOR DTC114ES			
R1	1-247-414-11	CARBON	560	5%	1/6W
R2	1-249-421-11	CARBON	2.2K	5%	1/6W
R3	1-249-433-11	CARBON	22K	5%	1/6W
R4	1-247-783-00	CARBON	10	5%	1/6W
R5	1-247-783-00	CARBON	10	5%	1/6W
R6	1-249-433-11	CARBON	22K	5%	1/6W
R7	1-247-886-00	CARBON	200K	5%	1/6W
R8	1-247-831-00	CARBON	1K	5%	1/6W
R9	1-247-889-00	CARBON	270K	5%	1/6W
R10	1-247-893-00	CARBON	390K	5%	1/6W
R11	1-247-884-00	CARBON	160K	5%	1/6W
R12	1-247-888-00	CARBON	240K	5%	1/6W
R13	1-247-879-00	CARBON	100K	5%	1/6W
R14	1-249-433-11	CARBON	22K	5%	1/6W
R15	1-247-879-00	CARBON	100K	5%	1/6W
R16	1-249-429-11	CARBON	10K	5%	1/6W
R17	1-247-903-00	CARBON	1M	5%	1/6W
R18	1-247-903-00	CARBON	1M	5%	1/6W
R19	1-247-831-00	CARBON	1K	5%	1/6W
R20	1-247-873-00	CARBON	56K	5%	1/6W
R21	1-249-429-11	CARBON	10K	5%	1/6W
R22	1-247-845-00	CARBON	3.9K	5%	1/6W
R23	1-247-903-00	CARBON	1M	5%	1/6W
R24	1-249-429-11	CARBON	10K	5%	1/6W
R25	1-249-429-11	CARBON	10K	5%	1/6W
R26	1-247-870-00	CARBON	43K	5%	1/6W
R27	1-247-895-00	CARBON	470K	5%	1/6W
R28	1-247-903-00	CARBON	1M	5%	1/6W
R29	1-249-433-11	CARBON	22K	5%	1/6W
R30	1-249-433-11	CARBON	22K	5%	1/6W
R31	1-247-838-00	CARBON	2K	5%	1/6W
R32	1-247-807-00	CARBON	100	5%	1/6W
R33	1-247-807-00	CARBON	100	5%	1/6W
R34	1-247-838-00	CARBON	2K	5%	1/6W
R35	1-247-838-00	CARBON	2K	5%	1/6W
R36	1-247-807-00	CARBON	100	5%	1/6W
R37	1-249-421-11	CARBON	2.2K	5%	1/6W
R38	1-247-887-00	CARBON	220K	5%	1/6W
R39	1-249-429-11	CARBON	10K	5%	1/6W
R40	1-247-864-00	CARBON	24K	5%	1/6W
R41	1-249-433-11	CARBON	22K	5%	1/6W
R42	1-247-867-00	CARBON	33K	5%	1/6W

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R43	1-247-853-00	CARBON	8.2K	5%	1/6W
R44	1-247-867-00	CARBON	33K	5%	1/6W
R45	1-249-429-11	CARBON	10K	5%	1/6W
R46	1-247-875-00	CARBON	68K	5%	1/6W
R47	1-247-841-00	CARBON	2.7K	5%	1/6W
R48	1-249-429-11	CARBON	10K	5%	1/6W
R49	1-247-879-00	CARBON	100K	5%	1/6W
R50	1-247-903-00	CARBON	1M	5%	1/6W
R51	1-249-429-11	CARBON	10K	5%	1/6W
R52	1-247-859-00	CARBON	15K	5%	1/6W
R53	1-247-875-00	CARBON	68K	5%	1/6W
R54	1-249-429-11	CARBON	10K	5%	1/6W
R55	1-247-887-00	CARBON	220K	5%	1/6W
R56	1-247-873-00	CARBON	56K	5%	1/6W
R57	1-247-881-00	CARBON	120K	5%	1/6W
R58	1-247-891-00	CARBON	330K	5%	1/6W
R59	1-247-869-00	CARBON	39K	5%	1/6W
R60	1-247-869-00	CARBON	39K	5%	1/6W
R61	1-247-822-00	CARBON	430	5%	1/6W
R62	1-249-425-11	CARBON	4.7K	5%	1/6W
R63	1-247-846-00	CARBON	4.3K	5%	1/6W
R64	1-249-429-11	CARBON	10K	5%	1/6W
R65	1-249-429-11	CARBON	10K	5%	1/6W
R66	1-247-838-00	CARBON	2K	5%	1/6W
R101	1-216-214-00	METAL CHIP	4.7K	5%	1/8W
R102	1-216-219-00	METAL CHIP	7.5K	5%	1/8W
R103	1-216-220-00	METAL CHIP	8.2K	5%	1/8W
R104	1-216-216-00	METAL CHIP	5.6K	5%	1/8W
R105	1-216-222-00	METAL CHIP	10K	5%	1/8W
R106	1-216-206-00	METAL CHIP	2.2K	5%	1/8W
R107	1-216-222-00	METAL CHIP	10K	5%	1/8W
R108	1-216-226-00	METAL CHIP	15K	5%	1/8W
R109	1-216-174-00	METAL CHIP	100	5%	1/8W
R110	1-216-206-00	METAL CHIP	2.2K	5%	1/8W
R111	1-216-262-00	METAL CHIP	470K	5%	1/8W
R112	1-216-214-00	METAL CHIP	4.7K	5%	1/8W
R113	1-216-206-00	METAL CHIP	2.2K	5%	1/8W
R114	1-216-226-00	METAL CHIP	15K	5%	1/8W
R115	1-216-226-00	METAL CHIP	15K	5%	1/8W
R116	1-216-270-00	METAL CHIP	1M	5%	1/8W
R117	1-216-206-00	METAL CHIP	2.2K	5%	1/8W
R118	1-216-208-00	METAL CHIP	2.7K	5%	1/8W
R120	1-216-200-00	METAL CHIP	1.2K	5%	1/8W
R121	1-249-429-11	CARBON	10K	5%	1/6W
R122	1-216-194-00	METAL CHIP	680	5%	1/8W
R123	1-216-214-00	METAL CHIP	4.7K	5%	1/8W
R124	1-216-246-00	METAL CHIP	100K	5%	1/8W
R125	1-216-246-00	METAL CHIP	100K	5%	1/8W
R126	1-216-200-00	METAL CHIP	1.2K	5%	1/8W
R127	1-249-429-11	CARBON	10K	5%	1/6W
R128	1-216-194-00	METAL CHIP	680	5%	1/8W
R129	1-216-214-00	METAL CHIP	4.7K	5%	1/8W
R130	1-216-270-00	METAL CHIP	1M	5%	1/8W
R131	1-216-270-00	METAL CHIP	1M	5%	1/8W
R132	1-216-246-00	METAL CHIP	100K	5%	1/8W
R135	1-216-246-00	METAL CHIP	100K	5%	1/8W
R136	1-216-198-00	METAL CHIP	1K	5%	1/8W

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R137	1-216-182-00	METAL CHIP	220	5%	1/8W
R138	1-216-246-00	METAL CHIP	100K	5%	1/8W
R140	1-216-254-00	METAL CHIP	220K	5%	1/8W
R141	1-216-216-00	METAL CHIP	5.6K	5%	1/8W
R142	1-216-246-00	METAL CHIP	100K	5%	1/8W
R143	1-216-246-00	METAL CHIP	100K	5%	1/8W
R201	1-216-214-00	METAL CHIP	4.7K	5%	1/8W
R202	1-216-219-00	METAL CHIP	7.5K	5%	1/8W
R203	1-216-220-00	METAL CHIP	8.2K	5%	1/8W
R204	1-216-216-00	METAL CHIP	5.6K	5%	1/8W
R205	1-216-222-00	METAL CHIP	10K	5%	1/8W
R206	1-216-206-00	METAL CHIP	2.2K	5%	1/8W
R207	1-216-222-00	METAL CHIP	10K	5%	1/8W
R208	1-216-226-00	METAL CHIP	15K	5%	1/8W
R209	1-216-174-00	METAL CHIP	100	5%	1/8W
R210	1-216-206-00	METAL CHIP	2.2K	5%	1/8W
R211	1-216-262-00	METAL CHIP	470K	5%	1/8W
R212	1-216-214-00	METAL CHIP	4.7K	5%	1/8W
R213	1-216-206-00	METAL CHIP	2.2K	5%	1/8W
R214	1-216-226-00	METAL CHIP	15K	5%	1/8W
R215	1-216-226-00	METAL CHIP	15K	5%	1/8W
R216	1-216-270-00	METAL CHIP	1M	5%	1/8W
R217	1-216-206-00	METAL CHIP	2.2K	5%	1/8W
R218	1-216-208-00	METAL CHIP	2.7K	5%	1/8W
R220	1-216-200-00	METAL CHIP	1.2K	5%	1/8W
R221	1-249-429-11	CARBON	10K	5%	1/6W
R222	1-216-194-00	METAL CHIP	680	5%	1/8W
R223	1-216-214-00	METAL CHIP	4.7K	5%	1/8W
R224	1-216-246-00	METAL CHIP	100K	5%	1/8W
R225	1-216-246-00	METAL CHIP	100K	5%	1/8W
R226	1-216-200-00	METAL CHIP	1.2K	5%	1/8W
R227	1-249-429-11	CARBON	10K	5%	1/6W
R228	1-216-194-00	METAL CHIP	680	5%	1/8W
R229	1-216-214-00	METAL CHIP	4.7K	5%	1/8W
R230	1-216-270-00	METAL CHIP	1M	5%	1/8W
R231	1-216-270-00	METAL CHIP	1M	5%	1/8W
R232	1-216-246-00	METAL CHIP	100K	5%	1/8W
R235	1-216-246-00	METAL CHIP	100K	5%	1/8W
R236	1-216-198-00	METAL CHIP	1K	5%	1/8W
R237	1-216-182-00	METAL CHIP	220	5%	1/8W
R238	1-216-246-00	METAL CHIP	100K	5%	1/8W
R240	1-216-254-00	METAL CHIP	220K	5%	1/8W
R241	1-216-216-00	METAL CHIP	5.6K	5%	1/8W
R242	1-216-246-00	METAL CHIP	100K	5%	1/8W
R243	1-216-246-00	METAL CHIP	100K	5%	1/8W
R301	1-216-206-00	METAL CHIP	2.2K	5%	1/8W
R302	1-216-222-00	METAL CHIP	10K	5%	1/8W
R303	1-216-202-00	METAL CHIP	1.5K	5%	1/8W
R304	1-216-198-00	METAL CHIP	1K	5%	1/8W
R306	1-216-262-00	METAL CHIP	470K	5%	1/8W
R307	1-216-262-00	METAL CHIP	470K	5%	1/8W
R308	1-216-270-00	METAL CHIP	1M	5%	1/8W
R309	1-247-903-00	CARBON	1M	5%	1/6W
R310	1-216-222-00	METAL CHIP	10K	5%	1/8W
R311	1-216-246-00	METAL CHIP	100K	5%	1/8W
R312	1-216-246-00	METAL CHIP	100K	5%	1/8W
R313	1-216-220-00	METAL CHIP	8.2K	5%	1/8W

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R314	1-216-198-00	METAL CHIP	1K	5%	1/8W
R315	1-216-246-00	METAL CHIP	100K	5%	1/8W
R316	1-216-246-00	METAL CHIP	100K	5%	1/8W
R317	1-216-246-00	METAL CHIP	100K	5%	1/8W
R318	1-216-246-00	METAL CHIP	100K	5%	1/8W
R319	1-216-238-00	METAL CHIP	47K	5%	1/8W
R320	1-216-246-00	METAL CHIP	100K	5%	1/8W
R321	1-216-246-00	METAL CHIP	100K	5%	1/8W
R401	1-247-815-00	CARBON	220	5%	1/6W
R402	1-247-815-00	CARBON MELF	220	5%	1/5W
R501	1-216-270-00	METAL CHIP	1M	5%	1/8W
R502	1-216-242-00	METAL CHIP	68K	5%	1/8W
R504	1-216-263-00	METAL CHIP	510K	5%	1/8W
R505	1-216-242-00	METAL CHIP	68K	5%	1/8W
R506	1-216-226-00	METAL CHIP	15K	5%	1/8W
R507	1-216-227-00	METAL CHIP	16K	5%	1/8W
R508	1-216-238-00	METAL CHIP	47K	5%	1/8W
R509	1-216-223-00	METAL CHIP	11K	5%	1/8W
R510	1-216-205-00	METAL CHIP	2K	5%	1/8W
R511	1-216-246-00	METAL CHIP	100K	5%	1/8W
R512	1-216-246-00	METAL CHIP	100K	5%	1/8W
R513	1-216-246-00	METAL CHIP	100K	5%	1/8W
R514	1-216-213-00	METAL CHIP	4.3K	5%	1/8W
R515	1-216-182-00	METAL CHIP	220	5%	1/8W
R516	1-216-198-00	METAL CHIP	1K	5%	1/8W
R517	1-216-226-00	METAL CHIP	15K	5%	1/8W
R518	1-216-219-00	METAL CHIP	7.5K	5%	1/8W
R519	1-216-215-00	METAL CHIP	5.1K	5%	1/8W
R520	1-216-270-00	METAL CHIP	1M	5%	1/8W
R521	1-216-208-00	METAL CHIP	2.7K	5%	1/8W
R522	1-216-270-00	METAL CHIP	1M	5%	1/8W
R523	1-216-213-00	METAL CHIP	4.3K	5%	1/8W
R524	1-216-226-00	METAL CHIP	15K	5%	1/8W
R525	1-216-222-00	METAL CHIP	10K	5%	1/8W
R526	1-216-262-00	METAL CHIP	470K	5%	1/8W
R527	1-216-256-00	METAL CHIP	270K	5%	1/8W
R528	1-216-222-00	METAL CHIP	10K	5%	1/8W
R529	1-216-222-00	METAL CHIP	10K	5%	1/8W
R530	1-216-238-00	METAL CHIP	47K	5%	1/8W
R531	1-216-214-00	METAL CHIP	4.7K	5%	1/8W
R532	1-216-258-00	METAL CHIP	330K	5%	1/8W
R533	1-216-253-00	METAL CHIP	200K	5%	1/8W
R534	1-216-246-00	METAL CHIP	100K	5%	1/8W
R535	1-216-246-00	METAL CHIP	100K	5%	1/8W
R536	1-216-222-00	METAL CHIP	10K	5%	1/8W
R537	1-216-222-00	METAL CHIP	10K	5%	1/8W
R538	1-216-246-00	METAL CHIP	100K	5%	1/8W
R539	1-216-222-00	METAL CHIP	10K	5%	1/8W
R541	1-216-222-00	METAL CHIP	10K	5%	1/8W
R542	1-216-222-00	METAL CHIP	10K	5%	1/8W
R544	1-216-222-00	METAL CHIP	10K	5%	1/8W
R545	1-216-222-00	METAL CHIP	10K	5%	1/8W
R546	1-216-222-00	METAL CHIP	10K	5%	1/8W
R547	1-216-198-00	METAL CHIP	1K	5%	1/8W
R548	1-216-214-00	METAL CHIP	4.7K	5%	1/8W
R549	1-216-214-00	METAL CHIP	4.7K	5%	1/8W

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R550	1-216-198-00	METAL CHIP	1K	5%	1/8W
R551	1-216-182-00	METAL CHIP	220	5%	1/8W
R553	1-216-198-00	METAL CHIP	1K	5%	1/8W
R554	1-216-222-00	METAL CHIP	10K	5%	1/8W
R555	1-216-222-00	METAL CHIP	10K	5%	1/8W
R556	1-216-222-00	METAL CHIP	10K	5%	1/8W
R557	1-216-222-00	METAL CHIP	10K	5%	1/8W
R558	1-216-270-00	METAL CHIP	1M	5%	1/8W
R559	1-216-182-00	METAL CHIP	220	5%	1/8W
R560	1-216-222-00	METAL CHIP	10K	5%	1/8W
R561	1-216-222-00	METAL CHIP	10K	5%	1/8W
R562	1-216-222-00	METAL CHIP	10K	5%	1/8W
R564	1-216-198-00	METAL CHIP	1K	5%	1/8W
R565	1-216-222-00	METAL CHIP	10K	5%	1/8W
R566	1-216-246-00	METAL CHIP	100K	5%	1/8W
R567	1-216-222-00	METAL CHIP	10K	5%	1/8W
R570	1-216-198-00	METAL CHIP	1K	5%	1/8W
R572	1-216-198-00	METAL CHIP	1K	5%	1/8W
R573	1-216-182-00	METAL CHIP	220	5%	1/8W
R574	1-216-194-00	METAL CHIP	680	5%	1/8W
R575	1-216-182-00	METAL CHIP	220	5%	1/8W
R576	1-216-182-00	METAL CHIP	220	5%	1/8W
R577	1-216-198-00	METAL CHIP	1K	5%	1/8W
R578	1-216-238-00	METAL CHIP	47K	5%	1/8W
R579	1-216-206-00	METAL CHIP	2.2K	5%	1/8W
R580	1-216-182-00	METAL CHIP	220	5%	1/8W
R581	1-216-198-00	METAL CHIP	1K	5%	1/8W
R583	1-216-222-00	METAL CHIP	10K	5%	1/8W
R584	1-216-222-00	METAL CHIP	10K	5%	1/8W
R585	1-216-226-00	METAL CHIP	15K	5%	1/8W
R586	1-216-223-00	METAL CHIP	11K	5%	1/8W
R587	1-216-242-00	METAL CHIP	68K	5%	1/8W
R588	1-216-198-00	METAL CHIP	1K	5%	1/8W
R589	1-216-246-00	METAL CHIP	100K	5%	1/8W
R591	1-216-222-00	METAL CHIP	10K	5%	1/8W
R592	1-216-222-00	METAL CHIP	10K	5%	1/8W
R593	1-216-222-00	METAL CHIP	10K	5%	1/8W
R594	1-216-222-00	METAL CHIP	10K	5%	1/8W
R595	1-216-222-00	METAL CHIP	10K	5%	1/8W
R596	1-216-222-00	METAL CHIP	10K	5%	1/8W
R597	1-216-222-00	METAL CHIP	10K	5%	1/8W
R598	1-216-222-00	METAL CHIP	10K	5%	1/8W
R599	1-216-222-00	METAL CHIP	10K	5%	1/8W
R600	1-216-214-00	METAL CHIP	4.7K	5%	1/8W
R602	1-216-198-00	METAL CHIP	1K	5%	1/8W
R604	1-216-246-00	METAL CHIP	100K	5%	1/8W
R605	1-216-222-00	METAL CHIP	10K	5%	1/8W
R606	1-216-222-00	METAL CHIP	10K	5%	1/8W
R607	1-216-222-00	METAL CHIP	10K	5%	1/8W
R608	1-216-222-00	METAL CHIP	10K	5%	1/8W
R609	1-216-222-00	METAL CHIP	10K	5%	1/8W
R610	1-216-222-00	METAL CHIP	10K	5%	1/8W
R611	1-216-198-00	METAL CHIP	1K	5%	1/8W
R612	1-216-198-00	METAL CHIP	1K	5%	1/8W
R613	1-249-437-11	CARBON	47K	5%	1/6W
R614	1-249-417-11	CARBON	1K	5%	1/6W
R801	1-249-429-11	CARBON	10K	5%	1/6W

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R802	1-249-429-11	CARBON	10K	5%	1/6W
R803	1-249-429-11	CARBON	10K	5%	1/6W
R804	1-249-429-11	CARBON	10K	5%	1/6W
R805	1-249-429-11	CARBON	10K	5%	1/6W
R806	1-249-441-11	CARBON	100K	5%	1/6W
R807	1-249-435-11	CARBON	33K	5%	1/6W
R808	1-247-866-00	CARBON	30K	5%	1/6W
R809	1-249-429-11	CARBON	10K	5%	1/6W
R810	1-249-429-11	CARBON	10K	5%	1/6W
R811	1-249-429-11	CARBON	10K	5%	1/6W
R816	1-247-887-00	CARBON	220K	5%	1/6W
R817	1-249-441-11	CARBON	100K	5%	1/6W
R818	1-249-441-11	CARBON	100K	5%	1/6W
R819	1-249-441-11	CARBON	100K	5%	1/6W
R820	1-247-116-00	CARBON	240	5%	1/4W
R821	1-247-116-00	CARBON	240	5%	1/4W
R822	1-247-102-00	CARBON	62	5%	1/4W
R823	1-247-102-00	CARBON	62	5%	1/4W
R824	1-247-102-00	CARBON	62	5%	1/4W
R825	1-247-809-00	CARBON	120	5%	1/6W
R826	1-247-822-00	CARBON	430	5%	1/6W
R827	1-247-814-00	CARBON	200	5%	1/6W
R828	1-247-814-00	CARBON	200	5%	1/6W
R829	1-247-817-00	CARBON	270	5%	1/6W
R830	1-247-817-00	CARBON	270	5%	1/6W
R831	1-247-817-00	CARBON	270	5%	1/6W
R832	1-247-812-00	CARBON	160	5%	1/6W
R833	1-247-812-00	CARBON	160	5%	1/6W
R834	1-247-823-00	CARBON	470	5%	1/6W
R835	1-247-817-00	CARBON	270	5%	1/6W
R836	1-247-827-00	CARBON	680	5%	1/6W
R837	1-247-817-00	CARBON	270	5%	1/6W
R838	1-247-827-00	CARBON	680	5%	1/6W
R839	1-247-812-00	CARBON	160	5%	1/6W
R840	1-247-823-00	CARBON	470	5%	1/6W
R841	1-247-823-00	CARBON	470	5%	1/6W
R1004	1-247-879-00	RES, CARBON 100K			
R1009	1-214-598-00	RES, METAL OXIDE FILM 56K			
R1014	1-247-831-00	RES, CARBON 1.0K			
R1201	1-247-831-00	RES, CARBON 1.0K			
R1202	1-247-831-00	RES, CARBON 1.0K			
R1203	1-247-745-11	RES, CARBON 330			
RV1	1-226-776-00	RES, ADJ, METAL GLAZE 220K			
RV2	1-226-776-00	RES, ADJ, METAL GLAZE 220K			
RV3	1-230-527-11	RES, ADJ, METAL GLAZE 100K			
RV4	1-226-703-00	RES, ADJ, METAL GLAZE 10K			
RV5	1-226-773-00	RES, ADJ, METAL GLAZE 22K			

ELECTRICAL PARTS

Ref.No.	Part No.	Description
RY1	1-515-519-00	RELAY
RY2	1-515-519-00	RELAY
RY3	1-515-519-00	RELAY
S401	1-554-980-11	KEY BOARD SWITCH (RESET)
S402	1-554-980-11	KEY BOARD SWITCH (EJECT)
S901	1-570-503-11	SWITCH, MICRO (CBP)
S902	1-570-502-11	SWITCH, MICRO (M1)
S903	1-553-198-00	SWITCH, LEAF (SLED LIMIT)
S904	1-570-504-11	SWITCH, MICRO (PST)
S905	1-570-504-11	SWITCH, MICRO (HOME)
S906	1-570-504-11	SWITCH, MICRO (LOT)
S907	1-570-504-11	SWITCH, MICRO (EJECT)
S908	1-570-504-11	SWITCH, MICRO (STOP)
SW801	1-554-813-21	KEY BOARD SWITCH (DISC)
SW802	1-554-813-21	KEY BOARD SWITCH (ALL OFF)
SW803	1-554-813-21	KEY BOARD SWITCH (TUNER)
SW804	1-554-813-21	KEY BOARD SWITCH (PGM PLAY)
SW805	1-554-813-21	KEY BOARD SWITCH (+ SCAN)
SW806	1-554-813-21	KEY BOARD SWITCH (- SCAN)
SW807	1-554-813-21	KEY BOARD SWITCH (+ MANU)
SW808	1-554-813-21	KEY BOARD SWITCH (- MANU)
SW809	1-554-813-21	KEY BOARD SWITCH (SENS/RMS)
SW810	1-554-813-21	KEY BOARD SWITCH (MEM)
SW811	1-554-813-21	KEY BOARD SWITCH (+ VOL)
SW812	1-554-813-21	KEY BOARD SWITCH (SELECT)
SW813	1-554-813-21	KEY BOARD SWITCH (- VOL)
SW814	1-554-813-21	KEY BOARD SWITCH (SE)
THP1	1-807-368-11	THERMISTOR PTH59F04BG222TS
X301	1-527-948-00	VIBRATOR, CRYSTAL
X501	1-567-301-11	OSCILLATOR, CRYSTAL (846.72kHz)
X502	1-567-121-00	VIBRATOR, CRYSTAL (4.194304MHz)
X801	1-567-098-00	VIBRATOR, CRYSTAL (32.768kHz)
ZD1001	8-719-101-69	DIODE RD8.2EL1

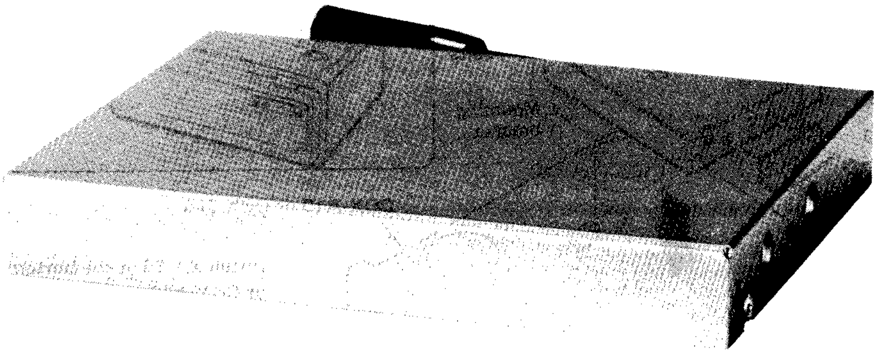
ACCESSORY & PACKING MATERIAL

Part No.	Description
*1-558-197-11	CORD (WITH TERMINAL)
1-558-398-11	CORD (WITH TERMINAL)
3-323-268-01	TAPE (C), MAGIC
3-323-269-01	TAPE (D), MAGIC
3-323-286-01	FRAME, ORNAMENTAL
3-323-287-01	PROTECTOR
*3-331-953-01	BRACKET, COMMANDER
*3-331-955-01	BRACKET (A), MAIN
3-331-981-01	COVER, HOLDER
3-331-982-01	BAG, INNER, HOLDER
3-331-983-01	COVER
3-331-984-01	COVER, REAR
3-331-989-01	SPACER
3-331-990-01	CASE, ACCESSORY
3-331-987-01	(AEP,E).........INDIVIDUAL, CARTON
3-331-991-01	(US,Canadian)...INDIVIDUAL, CARTON
3-331-992-01	BAG, PROTECTION
3-331-993-01	SHEET, PROTECTION
3-331-994-01	CUSHION (UPPER)
3-331-995-01	CUSHION (LOWER)
3-331-997-01	SHEET
*3-333-004-01	LABEL, CAUTION, TRANSPORT SCREW
*3-333-014-01	(AEP)...LABEL, SP
3-560-041-00	SCREW, HEXAGON
3-701-613-00	BAG, POLYETHYLENE
3-701-618-00	BAG, POLYETHYLENE
3-701-625-00	BAG, POLYETHYLENE
3-701-626-00	BAG, POLYETHYLENE
3-760-947-11	(AEP,E)........MANUAL, INSTRUCTION
3-760-947-21	(US,Canadian)...MANUAL, INSTRUCTION
3-760-947-31	(Canadian)......MANUAL, INSTRUCTION
3-760-947-41	(AEP)..........MANUAL, INSTRUCTION
*3-764-352-11	(AEP,E).........SHEET, INSTRUCTION
*3-764-352-21	(US,Canadian)...SHEET, INSTRUCTION
*3-764-352-41	(AEP)...........SHEET, INSTRUCTION
4-885-838-00	(AEP)...LABEL, CLASS 1
7-621-662-28	SCREW +RK 2.6X6
7-682-590-04	SCREW +B 6X16
7-685-147-61	SCREW +P 3X10 TYPE4
9-911-815-02	SPONGE, MAIN BRACKET
X-3329-528-1	SCREW ASSY, FITTING, MAIN
*X-3329-530-1	FITTING ASSY, MAIN
X-3329-533-1	BRACKET ASSY
X-3329-538-1	HOLDER ASSY, BOOKLET

XT-10

SERVICE MANUAL

US Model
Canadian Model
AEP Model
E Model



SPECIFICATIONS

FM tuner section

Tuning range	87.9–107.9 MHz
Antenna terminal	FM/AM external antenna connector
Intermediate frequency	10.7 MHz
Usable sensitivity	9.3 dBf (0.8 μV/75 ohms)
Sensitivity at 50 dB quieting	15.3 dBf (1.6 μV/75 ohms)
Selectivity	75 dB at ±400 kHz
Signal-to-noise ratio	70 dB (monaural), 67 dB (stereo)
Harmonic distortion at 1 kHz	0.15% (monaural), 0.3% (stereo)
Separation	42 dB
Frequency response	30 Hz–15,000 Hz ±3 dB

AM tuner section

Tuning range	530–1,620 kHz
Antenna terminal	FM/AM external antenna connector
Intermediate frequency	450 kHz
Selectivity	28μV
Signal-to-noise ratio	55 dB
Harmonic distortion	0.3%

General

Power requirements	12 V dc car battery (negative ground)
Current drain	300 mA
Operating temperature	−10°C–50°C (15°F–120°F)
Dimensions	Approx. 178 × 25 × 135 mm (w/h/d) ($7\frac{1}{8}$ × 1 × $5\frac{3}{8}$ inches)
Weight	Approx. 0.7 kg (1 lb 9 oz)

CAUTION:

XT-10 is tuner unit of CDX-A10 or CDX-J10. This set will be able to be repaired only by connecting with CDX-A10 or CDX-J10.

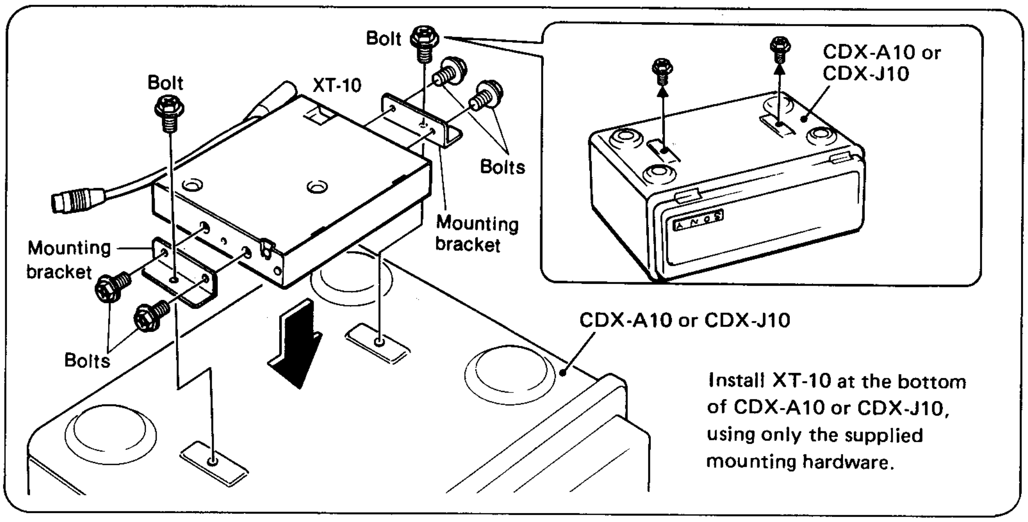
FM-AM TUNER UNIT

SONY®

MC-Service

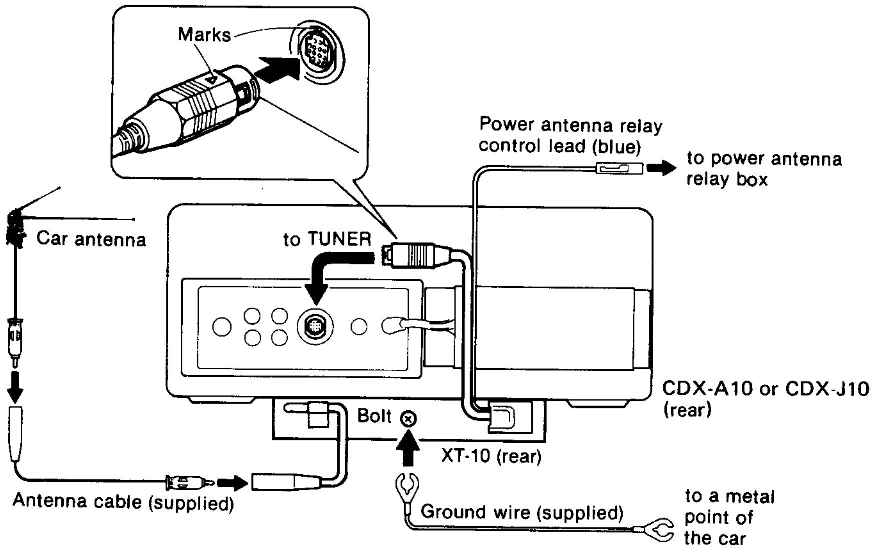
AUD

INSTALLATION


Bolt
Bolt
XT-10
Bolts
Mounting bracket
Mounting bracket
Bolts
CDX-A10 or CDX-J10
CDX-A10 or CDX-J10

Install XT-10 at the bottom of CDX-A10 or CDX-J10, using only the supplied mounting hardware.

CONNECTIONS


Marks
Power antenna relay control lead (blue)
to power antenna relay box
Car antenna
to TUNER
CDX-A10 or CDX-J10 (rear)
Bolt
XT-10 (rear)
Antenna cable (supplied)
Ground wire (supplied)
to a metal point of the car

Notes

- You can also connect the power amp control output lead of the CDX-A10 or CDX-J10 to power antenna relay box using a distributing lead. For more detailed information, refer to the installation/connections manual of the CDX-A10 or CDX-J10.
- Attach the supplied ground wire when the sound is noisy due to ignition noise, etc.

SECTION 1

OUTLINE

1-1. CIRCUIT DESCRIPTION

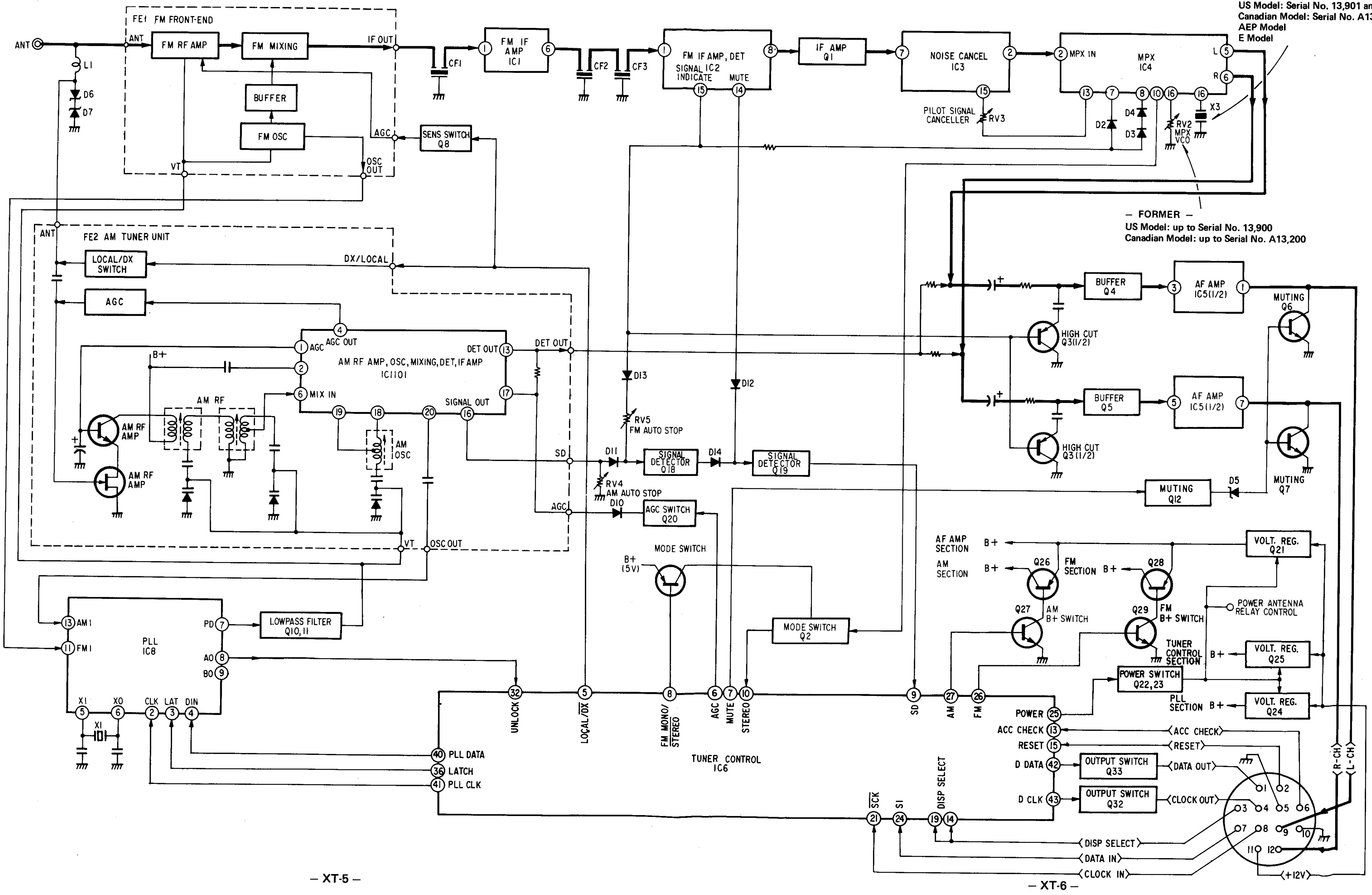
Pin Functions of IC6 (μPD7508HG)

Pin 3, 4, 28, 30, and 35 are not used on this set.

Pin No.	Symbol	IN/OUT	Name	Description
1	JSW1	IN	Jumper switch input pin for setting the desired destination.	These switches are set as shown below. JSW1 / JSW2 / Destination L / L / E (including LW) H / L / E (not including LW) L / H / J H / H / USA JSW1 and JSW2 are in ;,H" in this model.
2	.JSW2	IN		
3	JSW3	IN	Select switch input pin of LW1 – LW4 when JSW1 and JSW2 are in "L".	JSW3 / JSW4 / LW L / L / LW1 H / H / LW2 H / L / LW3 L / H / LW4 These switches are not used in this model.
4	JSW4	IN		
5	LOCAL/$\overline{\text{DX}}$	OUT	LOCAL/DX SIGNAL OUTPUT PIN	Outputs "H" for LOCAL and "L" for DX.
6	AGC	OUT	AGC CUT SIGNAL OUTPUT PIN	Outputs "L" normally and "H" during AUTO SCAN.
7	MUTE	OUT	MUTING SIGNAL OUTPUT PIN	Outputs "H" when frequency or band changes.
8	FM MONO/$\overline{\text{STEREO}}$	OUT	FM MONO/STEREO SELECT SIGNAL OUTPUT PIN	Outputs "H" at MONO, and "L" at STEREO. Effective for only FM.
9	SD	IN	SD (station detector) SIGNAL INPUT IN	Inputs "H" at tuned.
10	STEREO	IN	STEREO SIGNAL INPUT PIN	Inputs "H" during STEREO. Effective for only FM.
11	NC (non connection)			not used
12	NC (non connection)			not used
13	ACC CHECK	IN	ACC POWER INPUT PIN	Operation mode at ACC "H". HALT mode at "L".
14	DISP SELECT	IN	DISPLAY SELECT SIGNAL INPUT PIN	Outputs display data to display microcomputer when display select signal rises.
15	RESET	IN	RESET INPUT PIN	High active.
16	CL1		CRYSTAL OSCILLATOR PIN	4.19 MHz crystal oscillator pin.
17	V_{DD}		POWER SUPPLY (+5V)	
18	CL2		CRYSTAL OSCILLATOR PIN	4.19 MHz crystal oscillator pin.
19	DISP SELECT	IN	DISPLAY SELECT SIGNAL INPUT PIN	Outputs display data to display microcomputer when display select signal reises.
20	——		——	Connected to GND.
21	$\overline{\text{SCK}}$	IN	SERIAL CLOCK INPUT PIN	Serial clock input pin from display microcomputer.
22	NC (non connection)			not used
23	——		——	Connected to GND.
24	SI	IN	SERIAL DATA INPUT PIN	Serial data (32 bit) input pin from display microcomputer.
25	POWER	OUT	POWER SIGNAL OUTPUT PIN	POWER ON/OFF OUTPUT PIN OF PLL IC (CX7925). Outputs "H" at power on, "L" at power off.

Pin No.	Symbol	IN/OUT	Name	Description
26	FM	OUT	FM OUTPUT PIN	Output pin for FM band. Outputs "H" for FM band. Otherwise, outputs "L".
27	AM	OUT	AM OUTPUT PIN	Output pin for AM band. Outputs "H" for AM band (except for LW). Otherwise, outputs "L".
28	LW	OUT	LW OUTPUT PIN	Output pin for LW band. Outputs "H" for LW band. Otherwise, outputs "L". Not used on this set.
29	JSW5	IN	JUMPER SWITCH 5 INPUT PIN	Reference 10 kHz/9 kHz select switch for AM band. Becomes 9 kHz for "L" level input and 10 kHz for "H" level input.
30	AM STEREO	IN	STEREO INPUT PIN FOR AM	AM band (except for LW), stereo mode: Inputs "H" for stereo tuned. Otherwise, inputs "L". However, only when inputting "L" at JSW6 input pin. Not used on this set.
31	JSW6	IN	COMPULSORY MONO SELECT SWITCH INPUT PIN	Compulsory mono select switch for FM or FM/AM (except for LW). "H": FM is compelled to mono. "L": FM and AM (except for LW) are compelled to mono.
32	UNLOCK	IN	UNLOCK INPUT PIN	Input pin which distinguishes whether PLL IC (CX7925) is in LOCK mode or in UNLOCK mode. Inputs "H" in UNLOCK mode and "L" in LOCK mode.
33	NC (non connection)			not used
34	AM MONO/STEREO		AM MONO/STEREO SELECT SIGNAL OUTPUT PIN	Stereo mode output pin for AM band. Outputs "H" at MONO and "L" at STEREO. However, only when inputting "L" at JSW6 input pin.
35	NC (non connection)			not used
36	LATCH	OUT	LATCH SIGNAL OUTPUT PIN AFTER TRANSMITTING SERIAL DATA TO PLL IC. ACTIVE "H"	After transmitting data of standard frequency and programable divider, outputs LATCH. Active "H".
37	V_{SS}		GND	
38	——		——	Connected to GND.
39	NC (non connection)			not used
40	PLL DATA	OUT	PLL DATA OUTPUT PIN	Serial data output pin to PLL IC (CX7925).
41	PLL CLK	OUT	PLL CLOCK OUTPUT PIN	Clock output pin to PLL IC (CX7925). Outputs active "H". (Clock for transmitting serial data.)
42	D DATA	OUT	SERIAL DATA OUTPUT PIN	Serial data output pin to DISP microcomputer. (For transmitting serial.)
43	D CLK	OUT	CLOCK OUTPUT PIN WHEN TRANSMITTING DATA	Clock output pin when transmitting data to DISP microcomputer. Outputs CLOCK when transmitting data. Active "L".
44	NC (non connection)			not used

1-2. BLOCK DIAGRAM


ANT
L1
D6
D7
FE1 FM FRONT-END
ANT
FM RF AMP
FM MIXING
IF OUT
BUFFER
FM OSC
AGC
VT
OSC OUT
SENS SWITCH Q8
CF1
FM IF AMP IC1
CF2
CF3
FM IF AMP, DET
SIGNAL IC2 INDICATE
MUTE
IF AMP Q1
NOISE CANCEL IC3
PILOT SIGNAL CANCELLER
RV3
MPX IN
MPX IC4
L
R
D2
D4
D3
RV2 MPX VCO
X3
FE2 AM TUNER UNIT
ANT
LOCAL/DX SWITCH
DX/LOCAL
AGC
AGC
AGC OUT
AM RF AMP, OSC, MIXING, DET, IF AMP IC1101
DET OUT
DET OUT
B+
MIX IN
AM RF
AM RF AMP
AM RF AMP
AM OSC
SIGNAL OUT
SD
AGC
VT
OSC OUT
D13
D12
RV5 FM AUTO STOP
D11
D14
SIGNAL DETECTOR Q18
SIGNAL DETECTOR Q19
RV4 AM AUTO STOP
D10
AGC SWITCH Q20
MODE SWITCH
B+ (5V)
MODE SWITCH Q2
BUFFER Q4
AF AMP IC5(1/2)
HIGH CUT Q3(1/2)
MUTING Q6
BUFFER Q5
AF AMP IC5(1/2)
HIGH CUT Q3(1/2)
MUTING Q7
MUTING Q12
D5
AF AMP SECTION
AM SECTION
B+
B+
Q26
FM SECTION
B+
Q28
Q27
AM B+ SWITCH
Q29
FM B+ SWITCH
VOLT. REG. Q21
POWER ANTENNA RELAY CONTROL
TUNER CONTROL SECTION
B+
VOLT. REG. Q25
POWER SWITCH Q22,23
PLL SECTION
B+
VOLT. REG. Q24
AM1
FM1
PLL IC8
PD
LOWPASS FILTER Q10,11
A0
B0
X1
X0
CLK
LAT
DIN
X1
UNLOCK
LOCAL/DX
FM MONO/STEREO
AGC
MUTE
STEREO
SD
AM
FM
PLL DATA
LATCH
PLL CLK
TUNER CONTROL IC6
POWER
ACC CHECK
RESET
D DATA
D CLK
OUTPUT SWITCH Q33
OUTPUT SWITCH Q32
ACC CHECK
RESET
DATA OUT
CLOCK OUT
SCK
SI
DISP SELECT
DISP SELECT
DATA IN
CLOCK IN
+12V
R-CH
L-CH

– NEW –
US Model: Serial No. 13,901 and later
Canadian Model: Serial No. A13,201 and la
AEP Model
E Model

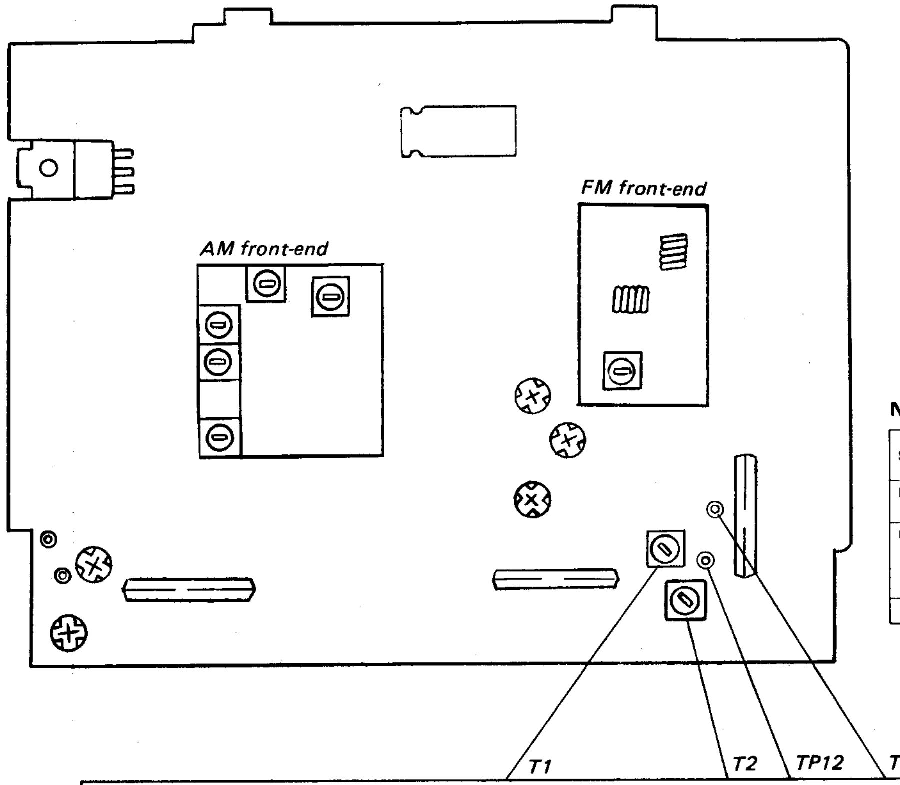
– FORMER –
US Model: up to Serial No. 13,900
Canadian Model: up to Serial No. A13,200

SECTION 2
ADJUSTMENTS

2-1. ELECTRICAL ADJUSTMENTS

The FM front-end and the AM tuner unit are carefully adjusted at the factory and are supplied as one whole block for replacement.

[TUNER BOARD]


FM front-end
AM front-end
T1
T2
TP12
TP11

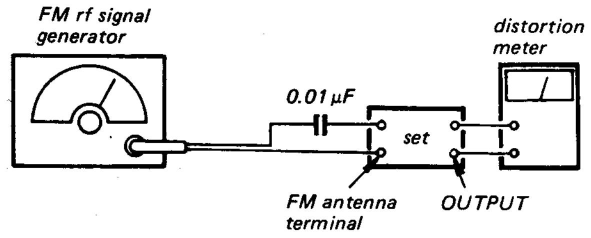
Note: Description of CDX-A10 or CDX-J10 SENS key.

SENS key	Mode	
	While receiving FM stations	While receiving AM stations
Press once.	**LCL mode** . . . (STEREO, LOCAL MODE) The LCL indicator appears.	**LCL mode** . . . (LOCAL MODE) The LCL indicator appears.
Press twice.	**MONO mode** . . . (MONO, DX MODE) The MONO indicator appears. If the FM stereo program has been received, the ST indicator goes out.	(released) . . . (DX MODE)
Press three times.	(released) . . . (STEREO, DX MODE)	

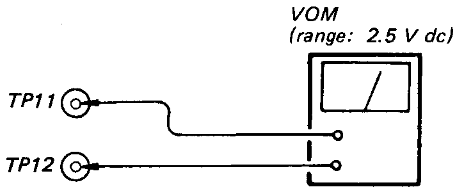
FM Discriminator Alignment

Setting:
MODE: MONO
(Refer to Note: Description of CDX-A10 or CDX-J10 SENS key.)

Procedure:


FM rf signal generator
0.01 μF
set
distortion meter
FM antenna terminal
OUTPUT

Carrier frequency: *98.1 MHz*
Output level: *1 mV (60 dB)*
Modulation: *1 kHz, 75 kHz deviation (100%)*


VOM
(range: 2.5 V dc)
TP11
TP12

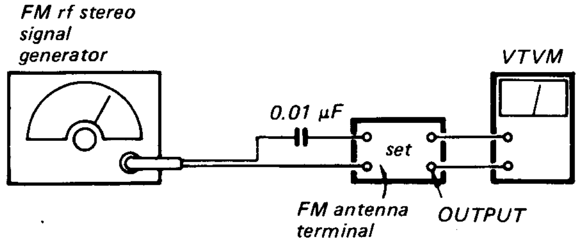
1. Tune the set to 98.1 MHz.
2. Connect a VOM to NULL test point (TP11, TP12) and adjust the primary-side core (T1) for 0 V DC reading on the VOM.
3. Adjust the secondary-side core (T2) for a minimum reading on the distortion meter.

Note: Repeat the secondary-side and primary-side adjustments several times, and they should be finally done by the primary-side core (T1).

FM Stereo Separation Adjustment

Setting:
MODE: STEREO, DX

Procedure:

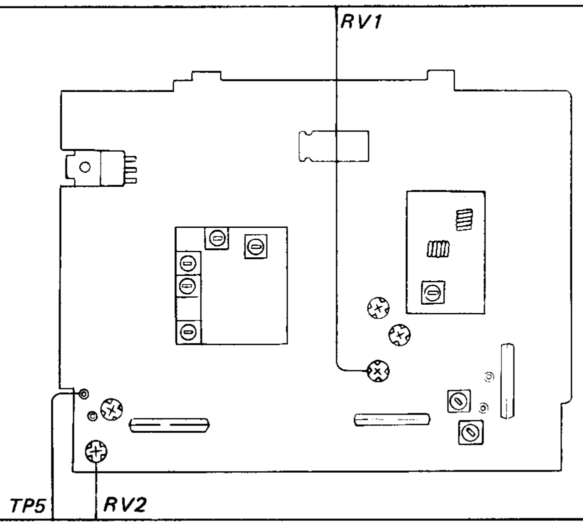

FM rf stereo signal generator
VTVM
0.01 μF
set
FM antenna terminal
OUTPUT

Carrier frequency: *98.1 MHz*
Output level: *1 mV (60 dB)*
Modulation:
Audio (1 kHz): *33.75 kHz deviation (45%)*
Pilot (19 kHz): *7.5 kHz deviation (10%)*
Sub-channel: *33.75 kHz deviation (45%)*

FM stereo signal generator output channel	VTVM connection	VTVM reading (dB)
L-CH	L-CH	Ⓐ
R-CH	L-CH	Ⓑ Adjust RV1 for minimum reading.
R-CH	R-CH	Ⓒ
L-CH	R-CH	Ⓓ Adjust RV1 for minimum reading.

L-CH Stereo separation: Ⓐ – Ⓑ
R-CH Stereo separation: Ⓒ – Ⓓ

The separations of both channels should be equal.

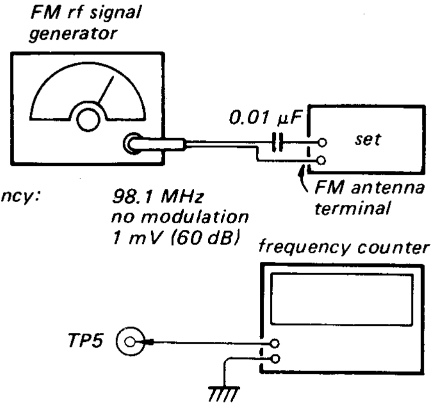


MPX VCO Adjustment

A) Regular Method

Setting:
MODE: STEREO, DX

Procedure:


FM rf signal generator
0.01 μF
set
FM antenna terminal
frequency counter
TP5

Carrier frequency: *98.1 MHz*
Modulation: *no modulation*
Output level: *1 mV (60 dB)*

1. Tune the set to 98.1 MHz.
2. Adjust RV2 for 76 kHz ±0.05 kHz on the counter.

This adjustment should be performed for US model up to Serial No. 13,900 and Canadian model up to Serial No. A13,200.

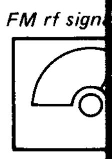
FM Aut

Setting:
MOD

Carrier fr
Mode:
Output le

Pilot-sig

Setting:
MOD



Carrier fr
Output le
Modulatio

Procedu
Adju

care-
s one

10 SENS key.

	While receiving AM stations
)	**LCL mode** . . . (LOCAL MODE) The LCL indicator appears.
d,	(released) . . . (DX MODE)

12)
DC

ni-

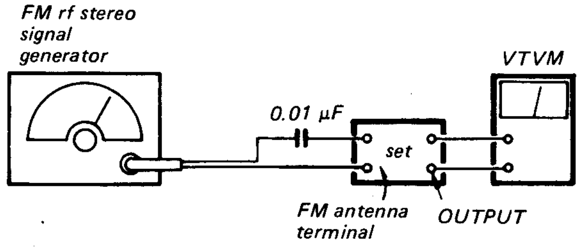
ad-
lly

FM Stereo Separation Adjustment

Setting:

MODE: STEREO, DX

Procedure:


FM rf stereo signal generator
0.01 µF
set
VTVM
FM antenna terminal
OUTPUT

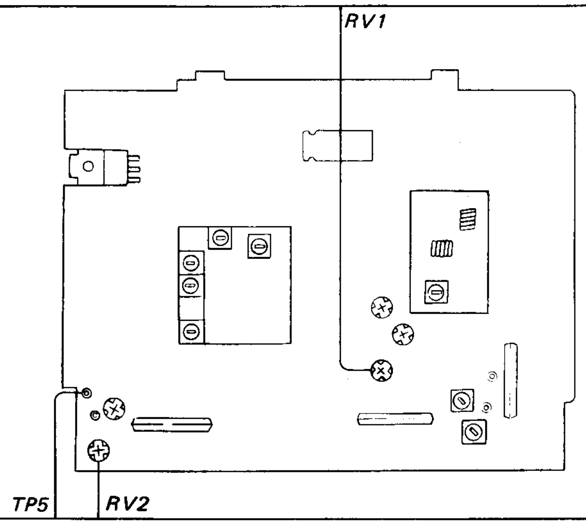
Carrier frequency: *98.1 MHz*
Output level: *1 mV (60 dB)*
Modulation:

Audio (1 kHz): *33.75 kHz deviation (45%)*
Pilot (19 kHz): *7.5 kHz deviation (10%)*
Sub-channel: *33.75 kHz deviation (45%)*

FM stereo signal generator output channel	VTVM connection	VTVM reading (dB)
L-CH	L-CH	Ⓐ
R-CH	L-CH	Ⓑ Adjust RV1 for minimum reading.
R-CH	R-CH	Ⓒ
L-CH	R-CH	Ⓓ Adjust RV1 for minimum reading.

L-CH Stereo separation: Ⓐ – Ⓑ
R-CH Stereo separation: Ⓒ – Ⓓ

The separations of both channels should be equal.



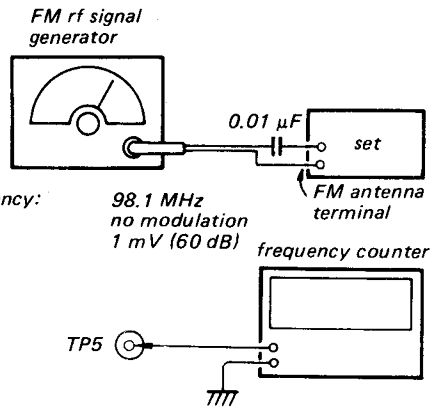
MPX VCO Adjustment

A) Regular Method

Setting:

MODE: STEREO, DX

Procedure:


FM rf signal generator
0.01 µF
set
FM antenna terminal
frequency counter
TP5

Carrier frequency: *98.1 MHz*
Modulation: *no modulation*
Output level: *1 mV (60 dB)*

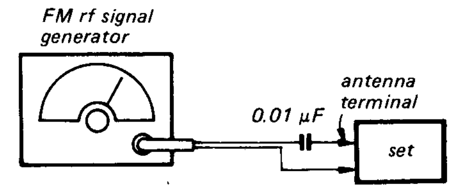
1. Tune the set to 98.1 MHz.
2. Adjust RV2 for 76 kHz ±0.05 kHz on the counter.

This adjustment should be performed for US model up to Serial No. 13,900 and Canadian model up to Serial No. A13,200.

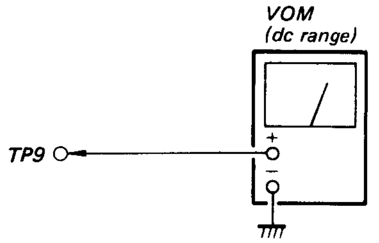
FM Auto-scan Stop Level Adjustment

Setting:

MODE: STEREO, DX

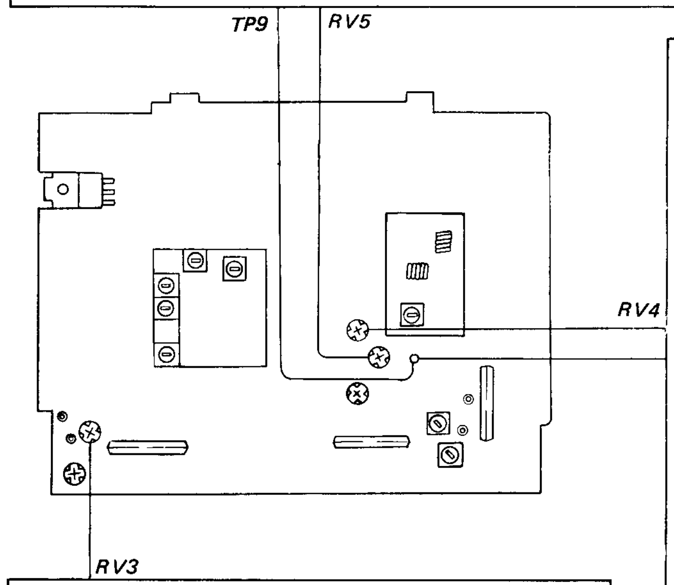

FM rf signal generator
0.01 µF
antenna terminal
set

Carrier frequency: *98.1 MHz*
Mode: *monaural, no modulation*
Output level: *60 dB (1 mV), 27 dB (22 µV)*


VOM (dc range)
TP9
+
–

Procedure:

1. Set FM rf signal generator output level to 60 dB.
2. Tune the set to 98.1 MHz.
3. Set FM rf signal generator output level to 27 dB.
4. Adjust RV5 at the point where VOM reading suddenly changes. This change should take place within ±5 dB change of input level and auto scanning stops.

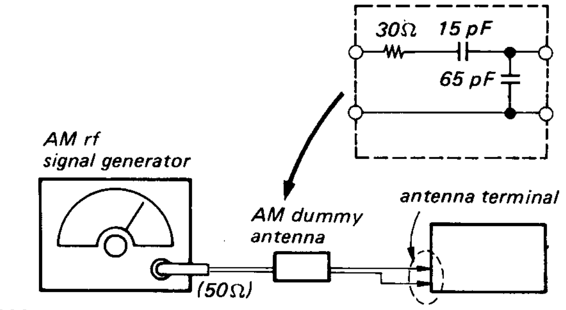

TP9
RV5
RV4
RV3

AM Auto-scan Stop Level Adjustment

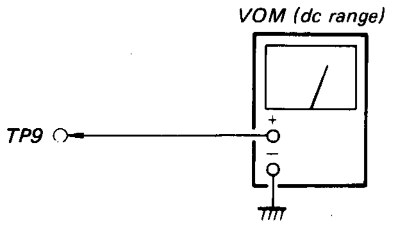
Setting: MODE: DX

Procedure:

1. Set AM rf signal generator output level to 60 dB.
2. Tune the set to 1000 kHz.
3. Set AM rf signal generator output level to 38 dB.
4. Adjust RV4 at the point where voltage reading suddenly changes. This change should take place within ±5 dB change of input level and auto scanning stops.


30Ω
15 pF
65 pF
AM rf signal generator
AM dummy antenna
antenna terminal
(50Ω)

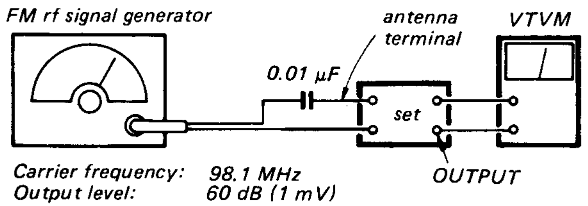
1000 kHz, 60 dB (1 mV),
38 dB (79 µV) no modulation


VOM (dc range)
TP9
+
–

Pilot-signal Canceller Adjustment

Setting:

MODE: STEREO, DX


FM rf signal generator
antenna terminal
VTVM
0.01 µF
set
OUTPUT

Carrier frequency: *98.1 MHz*
Output level: *60 dB (1 mV)*
Modulation: *19 kHz pilot only (7.5 kHz dev.)*

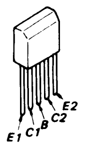
Procedure:

Adjust RV3 for a minimum reading on VTVM.

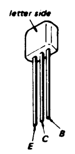
SECTION 3
DIAGRAMS

- **Semicondutor Lead Layouts**

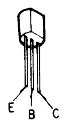
2SA995



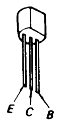
2SA1175


letter side
E
C
B

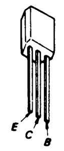
2SB1014



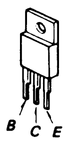
2SC1345
2SD1388



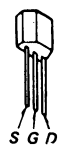
2SC2603F
2SD1012
DTC124ES



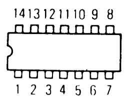
2SD1266-Q



2SK184-GR

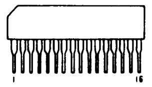


CX-7925

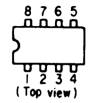

14 13 12 11 10 9 8
1 2 3 4 5 6 7

(Top view)

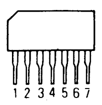
LA1140
LA2110
LA3376



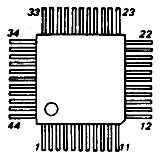
NJM2043D-D


8 7 6 5
1 2 3 4
(Top view)

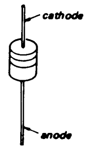
TA7302P



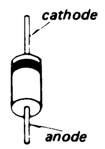
μPD7508HG-548-22


33
23
34
22
44
12
1
11

1SS119


cathode
anode

HZ2ALL
HZ6A3L
RD9.1EB2
RD10EB2
RD16EB1

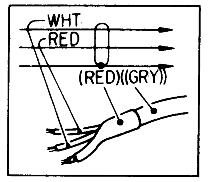

cathode
anode

Note on Schematic Diagram:

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼ W or less unless otherwise specified.
- △ : internal component.
- ▬ : B+ bus.
- ▭ : adjustment for repair.
- Power voltages is 14.4 V and fed with regurated dc power supply from ACC and BACK UP by connecting with CDX-A10/J10.
  Voltages are dc with respect to ground in no-signal mode.
  Voltage variations may be noted due to normal production tolerances.
  no mark : FM
  (   ): AM
  LCL : LOCAL MODE
- ━➡━ : FM signal path
  ━ ━➡ : L-CH
  ━ ‥➡ : R-CH
- ➡ : AM signal path

Note on Mounting Diagram:

- Color code or sleeving over the end of the jacket.

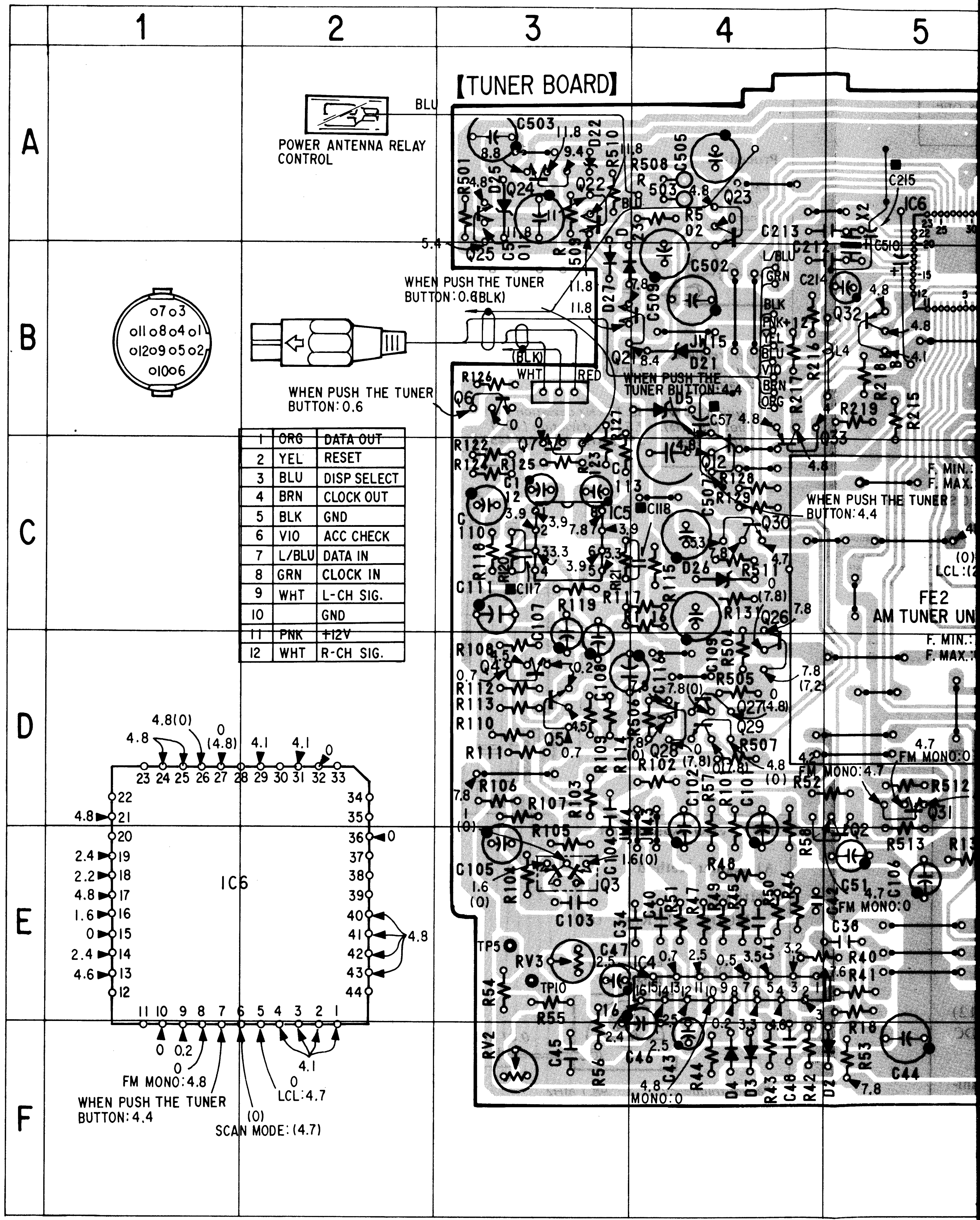

WHT
RED
(RED)
(GRY)

- ○── : parts extracted from the component side.
- ■ : part mounted on the conductor side.
- ⁚⁞⇠ : indicates side identified with part number.

US Model: up to Serial No. 13,900
Canadian Model: up to Serial No. A13,200

3-1. MOUNTING DIAGRAM (Former type) – *Component Side* –

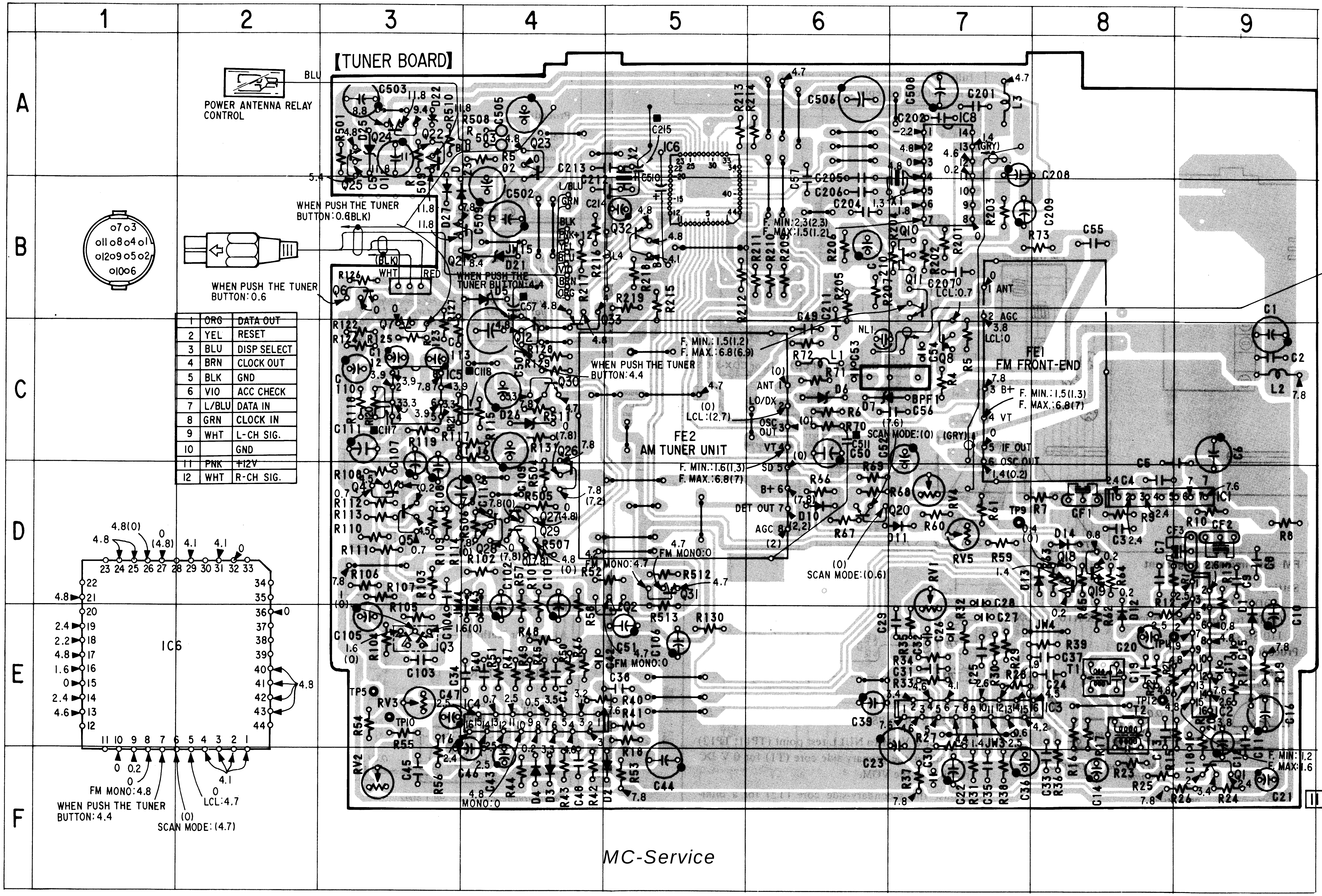
Ref. No.	Location
D1	E-9
D2	F 5
D3	F-4
D4	F-4
D5	B-4
D6	C-6
D7	C-7
D10	D-6
D11	D-7
D12	E-8
D13	D-8
D14	D-8
D21	B-4
D22	A-3
D23	B-4
D25	A-3
D26	C-4
D27	B-4
IC1	D-9
IC2	E 9
IC3	E-8
IC4	E-4
IC5	C-3
IC6	B-5
IC8	A-7
Q1	F-9
Q2	E-5
Q3	E-3
Q4	D-3
Q5	D-3
Q6	B-3
Q7	C-3
Q8	C-7
Q10	B-7
Q11	B-7
Q12	C 4
Q18	D-8
Q19	D-8
Q20	D-7
Q21	B-4
Q22	A-3
Q23	A-4
Q24	A-3
Q25	B-3
Q26	D-4
Q27	D-4
Q28	D-4
Q29	D-4
Q30	C-4
Q31	E-5
Q32	B-5
Q33	C-5


1
2
3
4
5
A
B
C
D
E
F
【TUNER BOARD】
POWER ANTENNA RELAY CONTROL
BLU
WHEN PUSH THE TUNER BUTTON: 0.6(BLK)
WHEN PUSH THE TUNER BUTTON: 0.6
WHEN PUSH THE TUNER BUTTON: 4.4
WHEN PUSH THE TUNER BUTTON: 4.4
(BLK)
WHT
RED
o7o3
o11 o8 o4 o1
o12 o9 o5 o2
o10 o6
F. MIN.
F. MAX.
LCL
FE2
AM TUNER UN
FM MONO: 4.7
FM MONO: 0
MONO: 0
IC6
4.8(0)
0
(4.8)
4.1
4.1
0
23 24 25 26 27 28 29 30 31 32 33
22 21 20 19 18 17 16 15 14 13 12
34 35 36 37 38 39 40 41 42 43 44
11 10 9 8 7 6 5 4 3 2 1
FM MONO: 4.8
WHEN PUSH THE TUNER BUTTON: 4.4
LCL: 4.7
(0)
SCAN MODE: (4.7)

1	ORG	DATA OUT
2	YEL	RESET
3	BLU	DISP SELECT
4	BRN	CLOCK OUT
5	BLK	GND
6	VIO	ACC CHECK
7	L/BLU	DATA IN
8	GRN	CLOCK IN
9	WHT	L-CH SIG.
10		GND
11	PNK	+12V
12	WHT	R-CH SIG.

3-1. MOUNTING DIAGRAM (Former type) *– Component Side –*

Ref. No.	Location
D1	E-9
D2	F 5
D3	F-4
D4	F-4
D5	B-4
D6	C-6
D7	C-7
D10	D-6
D11	D-7
D12	E-8
D13	D-8
D14	D-8
D21	B-4
D22	A-3
D23	B-4
D25	A-3
D26	C-4
D27	B-4
IC1	D-9
IC2	E 9
IC3	E-8
IC4	E-4
IC5	C-3
IC6	B-5
IC8	A-7
Q1	F-9
Q2	E-5
Q3	E-3
Q4	D-3
Q5	D-3
Q6	B-3
Q7	C-3
Q8	C-7
Q10	B-7
Q11	B-7
Q12	C 4
Q18	D-8
Q19	D-8
Q20	D-7
Q21	B-4
Q22	A-3
Q23	A-4
Q24	A-3
Q25	B-3
Q26	D-4
Q27	D-4
Q28	D-4
Q29	D-4
Q30	C-4
Q31	E-5
Q32	B-5
Q33	C-5


1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
【TUNER BOARD】
POWER ANTENNA RELAY CONTROL
BLU
WHEN PUSH THE TUNER BUTTON: 0.6 (BLK)
WHEN PUSH THE TUNER BUTTON: 0.6
WHEN PUSH THE TUNER BUTTON: 4.4
WHEN PUSH THE TUNER BUTTON: 4.4
(BLK)
WHT
RED
ANT
FE1 FM FRONT-END
FE2 AM TUNER UNIT
IC6
IC1
IC3
IC4
IC5
IC8
F. MIN.: 1.5(1.2)
F. MAX.: 6.8(6.9)
F. MIN.: 2.3(2.3)
F. MAX.: 1.5(1.2)
F. MIN.: 1.6(1.3)
F. MAX.: 6.8(7)
F. MIN.: 1.5(1.3)
F. MAX.: 6.8(7)
F. MIN.: 1.2
F. MAX.: 1.6
SCAN MODE: (0.6)
SCAN MODE: (4.7)
FM MONO: 4.8
FM MONO: 0
LCL: 4.7
LCL: (2.7)
ANT
LO/DX
OSC OUT
VT
SD
B+
DET OUT
AGC
1 ANT
2 AGC
3 B+
4 VT
5 IF OUT
6 OSC OUT
(GRY)
11

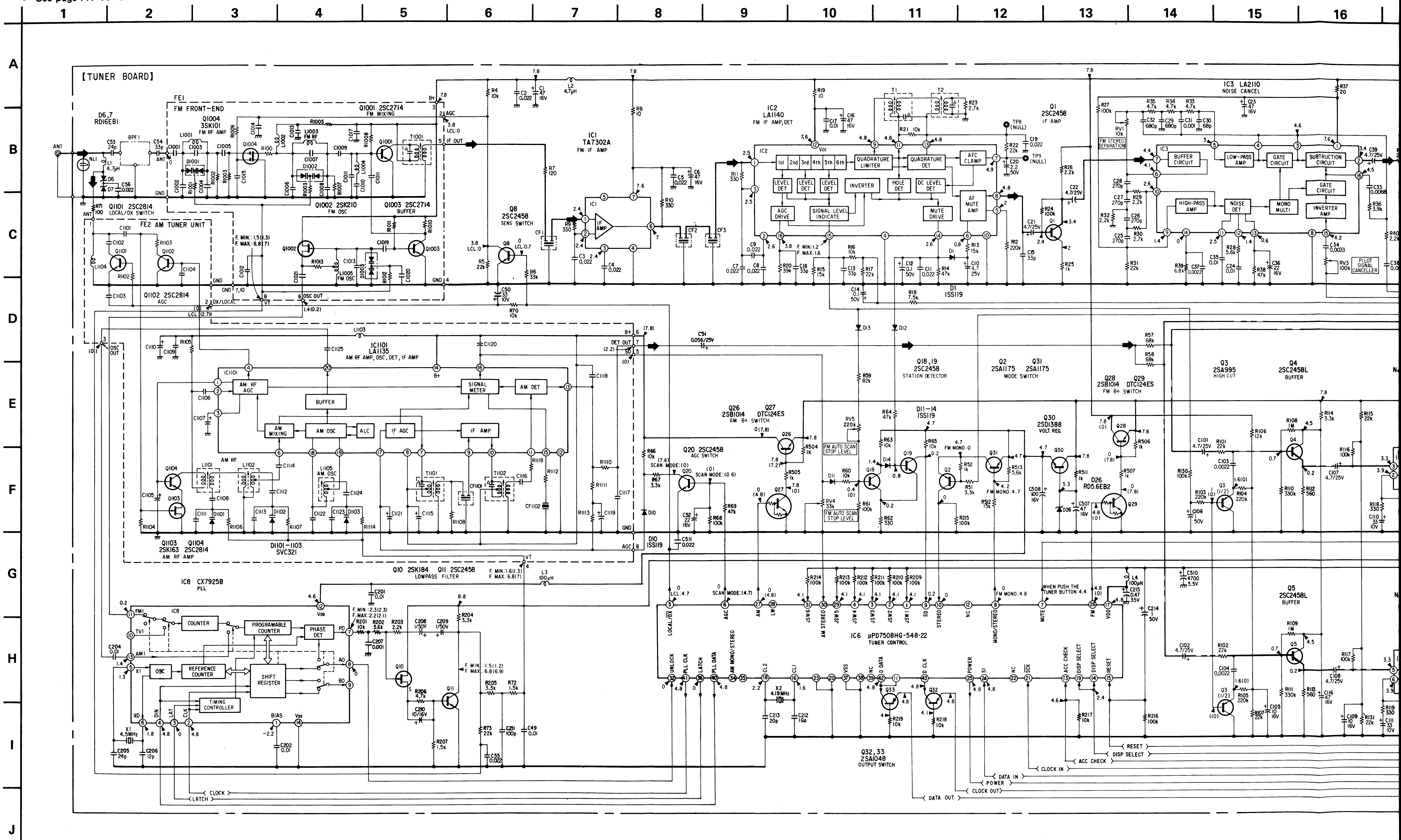
1	ORG	DATA OUT
2	YEL	RESET
3	BLU	DISP SELECT
4	BRN	CLOCK OUT
5	BLK	GND
6	VIO	ACC CHECK
7	L/BLU	DATA IN
8	GRN	CLOCK IN
9	WHT	L-CH SIG.
10		GND
11	PNK	+12V
12	WHT	R-CH SIG.

3-2. SCHEMATIC DIAGRAM (Former type)

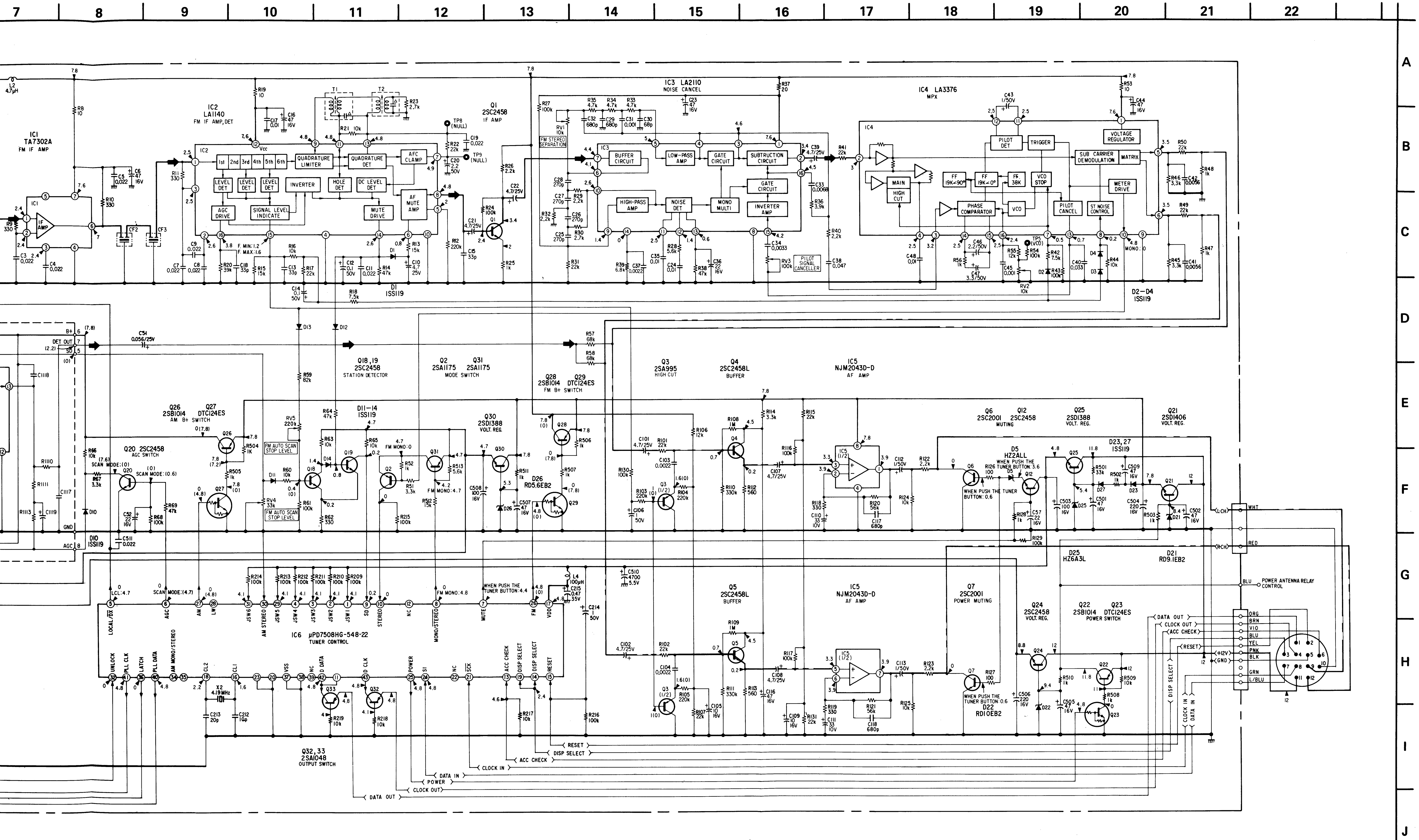
- See page XT-10 for notes.

US Model: up to Serial No. 13,900
Canadian Model: up to Serial No. A13,200

US Model: up to Serial No. 13,900
Canadian Model: up to Serial No. A13,200


1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
A B C D E F G H I J
[TUNER BOARD]
FE1 FM FRONT-END
Q1004 3SK101 FM RF AMP
Q1001 2SC2714 FM MIXING
Q1002 2SK210 FM OSC
Q1003 2SC2714 BUFFER
Q1101 2SC2814 LOCAL/DX SWITCH
FE2 AM TUNER UNIT
Q1102 2SC2814 AGC
D6,7 RD16EB1
IC1 TA7302A FM IF AMP
Q8 2SC2458 SENS SWITCH
IC2 LA1140 FM IF AMP, DET
Q1 2SC2458 IF AMP
IC3 LA2110 NOISE CANCEL
IC1101 LA1135 AM RF AMP, OSC, DET, IF AMP
D1101–1103 SVC321
Q1103 2SK163 Q1104 2SC2814 AM RF AMP
Q18,19 2SC2458 STATION DETECTOR
Q2 2SA1175 Q31 2SA1175 MODE SWITCH
Q3 2SA995 HIGH CUT
Q4 2SC2458L BUFFER
Q26 2SB1014 Q27 DTC124ES AM B+ SWITCH
Q28 2SB1014 Q29 DTC124ES FM B+ SWITCH
Q30 2SD1388 VOLT. REG.
Q20 2SC2458 AGC SWITCH
D11–14 1SS119
D26 RD5.6EB2
IC8 CX7925B PLL
Q10 2SK184 Q11 2SC2458 LOWPASS FILTER
IC6 μPD7508HG-548-22 TUNER CONTROL
Q32,33 2SA1048 OUTPUT SWITCH
Q5 2SC2458L BUFFER
FM AUTO SCAN STOP LEVEL
WHEN PUSH THE TUNER BUTTON:4.4
RESET
DISP SELECT
ACC CHECK
CLOCK IN
DATA IN
POWER
CLOCK OUT
DATA OUT
CLOCK
LATCH

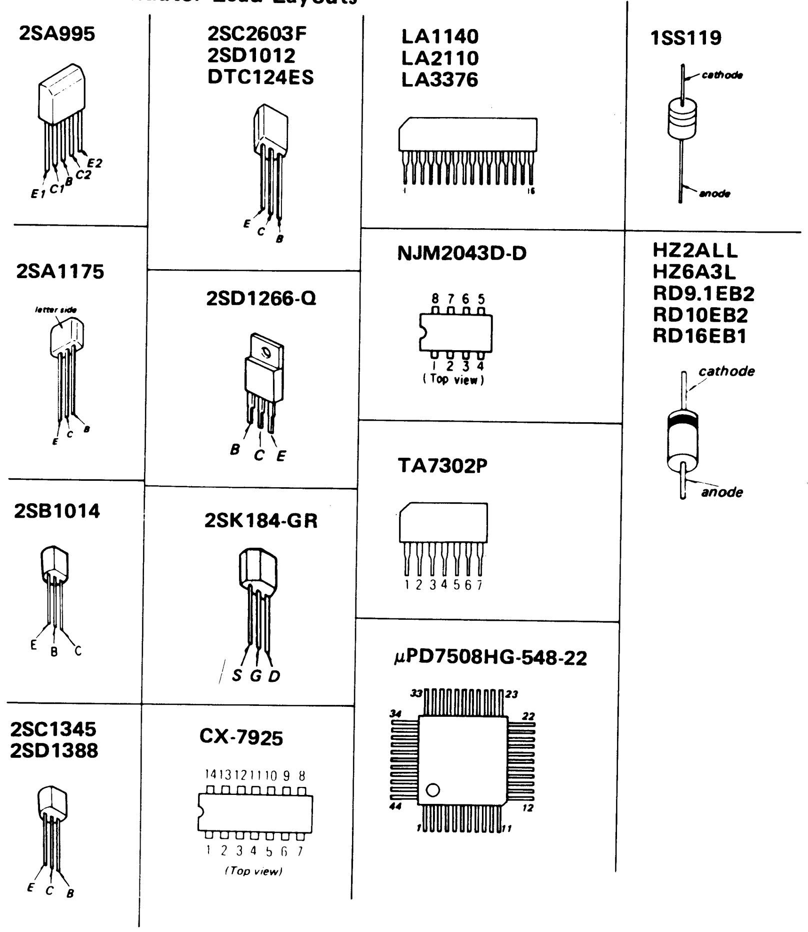
MC-Service


IC1 TA7302A FM IF AMP
IC2 LA1140 FM IF AMP, DET
Q1 2SC2458 IF AMP
IC3 LA2110 NOISE CANCEL
IC4 LA3376 MPX
Q18, 19 2SC2458 STATION DETECTOR
Q2 2SA1175 Q31 2SA1175 MODE SWITCH
Q28 2SB1014 Q29 DTC124ES FM B+ SWITCH
Q3 2SA995 HIGH CUT
Q4 2SC2458L BUFFER
IC5 NJM2043D-D AF AMP
Q26 2SB1014 Q27 DTC124ES AM B+ SWITCH
Q20 2SC2458 AGC SWITCH
D11-14 1SS119
Q30 2SD1388 VOLT. REG.
D26 RD5.6EB2
Q6 2SC2001 Q12 2SC2458 MUTING
Q25 2SD1388 VOLT. REG.
Q21 2SD1406 VOLT. REG.
D5 HZ2ALL
D23, 27 1SS119
D25 HZ6A3L
D21 RD9.1EB2
IC6 μPD7508HG-548-22 TUNER CONTROL
Q5 2SC2458L BUFFER
IC5 NJM2043D-D AF AMP
Q7 2SC2001 POWER MUTING
Q24 2SC2458 VOLT. REG.
Q22 2SB1014 Q23 DTC124ES POWER SWITCH
Q32, 33 2SA1048 OUTPUT SWITCH
D22 RD10EB2
D1 1SS119
D2-D4 1SS119
D10 1SS119
FM AUTO SCAN STOP LEVEL
FM STEREO SEPARATION
PILOT SIGNAL CANCELLER
WHEN PUSH THE TUNER BUTTON
POWER ANTENNA RELAY CONTROL
DATA OUT
CLOCK OUT
ACC CHECK
RESET
DISP SELECT
CLOCK IN
DATA IN
POWER
WHT
RED
BLU
ORG
BRN
VIO
YEL
PNK
BLK
GRN
L/BLU
(L-CH)
(R-CH)
(+12V)
(GND)
7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22
A B C D E F G H I J

MC-Service

SECTION 3
DIAGRAMS

- **Semicondutor Lead Layouts**

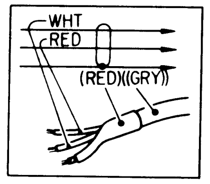

2SA995
E1 C1 B C2 E2
2SC2603F
2SD1012
DTC124ES
E C B
LA1140
LA2110
LA3376
1 16
1SS119
cathode
anode
2SA1175
letter side
E C B
2SD1266-Q
B C E
NJM2043D-D
8 7 6 5
1 2 3 4
(Top view)
HZ2ALL
HZ6A3L
RD9.1EB2
RD10EB2
RD16EB1
cathode
anode
TA7302P
1 2 3 4 5 6 7
2SB1014
E B C
2SK184-GR
S G D
μPD7508HG-548-22
33 23
34 22
44 12
1 11
2SC1345
2SD1388
E C B
CX-7925
14 13 12 11 10 9 8
1 2 3 4 5 6 7
(Top view)

Note on Schematic Diagram:

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼ W or less unless otherwise specified.
- △ : internal component.
- ▬ : B+ bus.
- ▭ : adjustment for repair.
- Power voltages is 14.4 V and fed with regurated dc power supply from ACC and BACK UP by connecting with CDX-A10/J10.
  Voltages are dc with respect to ground in no-signal mode.
  Voltage variations may be noted due to normal production tolerances.
  no mark : FM
  (   ) : AM
  LCL : LOCAL MODE
- ━➡━ : FM signal path
  ━ ━ ━➡ : L-CH
  ━ ･･ ━➡ : R-CH
- ➡ : AM signal path

Note on Mounting Diagram:

- Color code or sleeving over the end of the jacket.


WHT
RED
(RED)((GRY))

- ○── : parts extracted from the component side.
- ■ : part mounted on the conductor side.
- [ ]← : indicates side identified with part number.

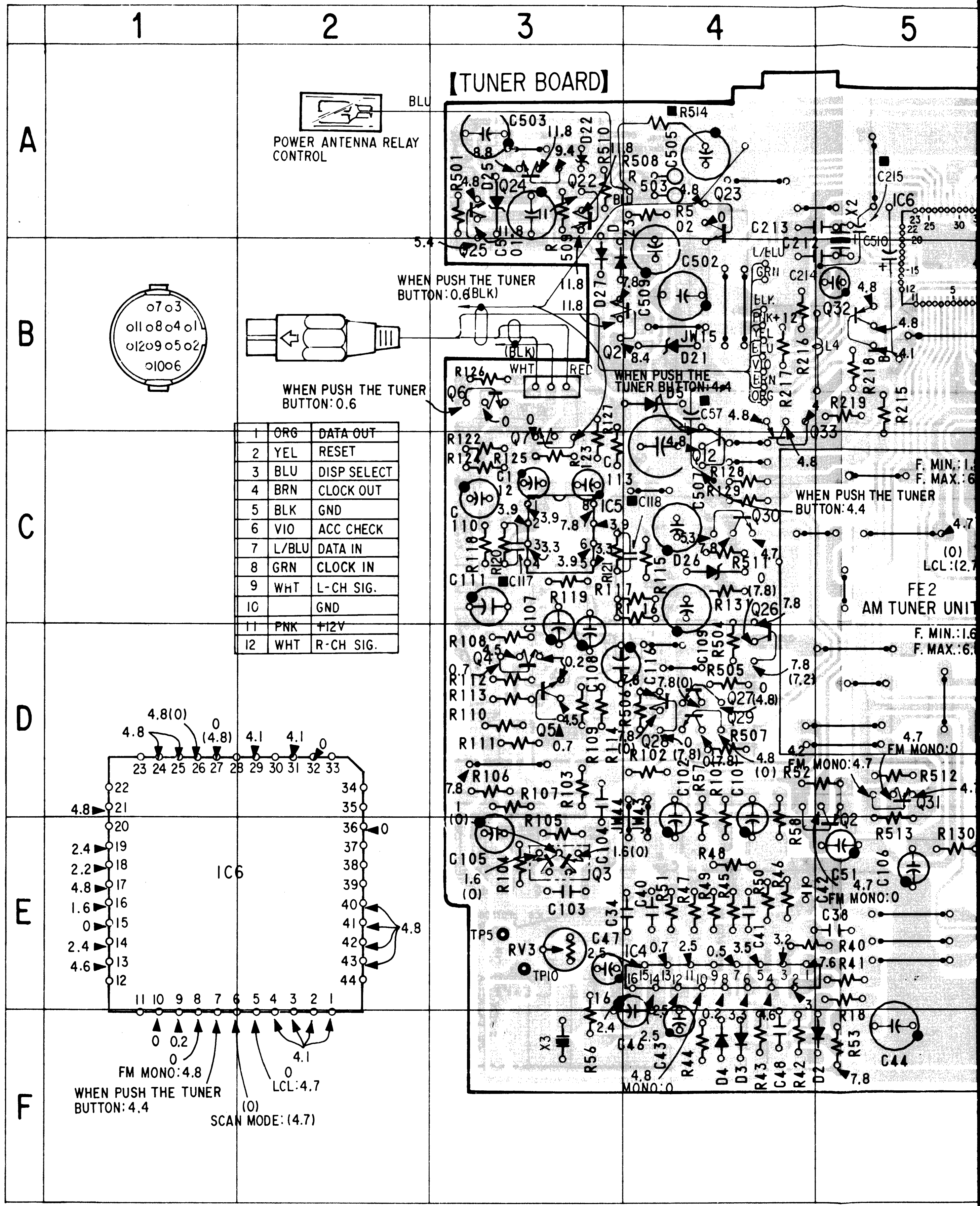
MC-Service

US Model: Serial No. 13,901 and later
Canadian Model: Serial No. A13,201 and later

AEP Model
E Model

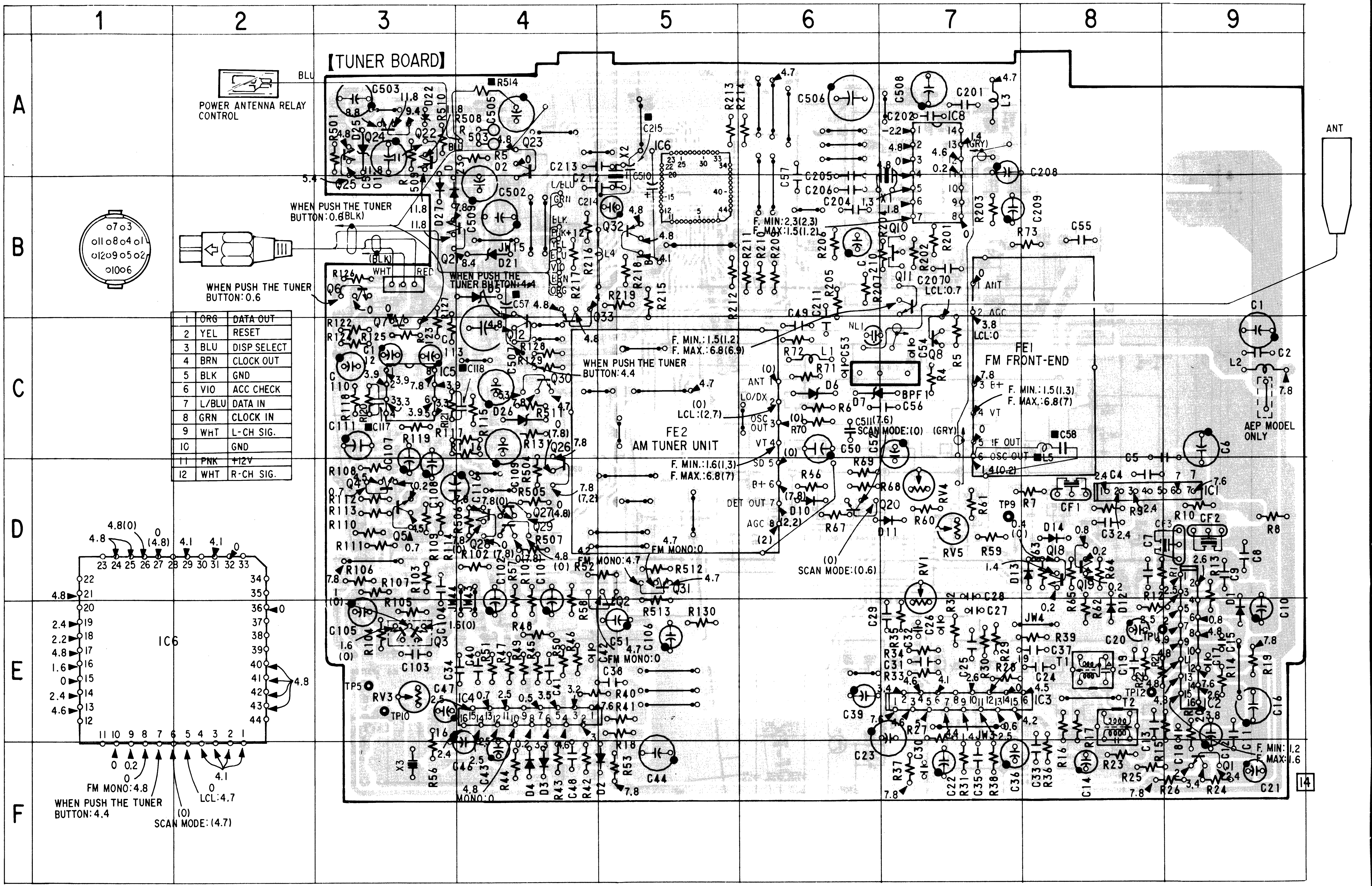
3-3. MOUNTING DIAGRAM (New type) – *Component Side* –

Ref. No.	Location
D1	E-9
D2	F 5
D3	F-4
D4	F-4
D5	B-4
D6	C-6
D7	C-7
D10	D-6
D11	D-7
D12	E-8
D13	D-8
D14	D-8
D21	B-4
D22	A-3
D23	B-4
D25	A-3
D26	C-4
D27	B-4
IC1	D-9
IC2	E 9
IC3	E-8
IC4	E-4
IC5	C-3
IC6	B-5
IC8	A-7
Q1	F-9
Q2	E-5
Q3	E-3
Q4	D-3
Q5	D-3
Q6	B-3
Q7	C-3
Q8	C-7
Q10	B-7
Q11	B-7
Q12	C 4
Q18	D-8
Q19	D-8
Q20	D-7
Q21	B-4
Q22	A-3
Q23	A-4
Q24	A-3
Q25	B-3
Q26	D-4
Q27	D-4
Q28	D-4
Q29	D-4
Q30	C-4
Q31	E-5
Q32	B-5
Q33	C-5


1
2
3
4
5
A
B
C
D
E
F
[TUNER BOARD]
POWER ANTENNA RELAY CONTROL
BLU
WHEN PUSH THE TUNER BUTTON: 0.6(BLK)
WHEN PUSH THE TUNER BUTTON: 0.6
WHEN PUSH THE TUNER BUTTON: 4.4
WHEN PUSH THE TUNER BUTTON: 4.4
1 ORG DATA OUT
2 YEL RESET
3 BLU DISP SELECT
4 BRN CLOCK OUT
5 BLK GND
6 VIO ACC CHECK
7 L/BLU DATA IN
8 GRN CLOCK IN
9 WHT L-CH SIG.
10 GND
11 PNK +12V
12 WHT R-CH SIG.
IC6
FE2
AM TUNER UNIT
F. MIN.
F. MAX.
LCL
FM MONO: 4.7
FM MONO: 0
FM MONO: 4.8
LCL: 4.7
SCAN MODE: (4.7)
C503
C505
C502
C213
C212
C214
C215
C510
R514
R508
R501
R5
Q22
Q23
Q24
Q25
Q32
Q33
Q6
Q4
Q5
Q26
Q27
Q28
Q29
Q30
Q31
Q3
Q2
D21
D26
IC5
IC4
C118
C117
C111
C110
C105
C103
C47
C46
C43
C44
C38
C51
C106
R119
R108
R112
R113
R110
R111
R106
R107
R105
R104
R102
R505
R507
R52
R512
R513
R130
R48
R40
R41
R18
R53
R56
R44
R43
R42
RV3
TP5
TP10
X3
L4
D2
D3
D4

3-3. MOUNTING DIAGRAM (New type) *– Component Side –*

Ref. No.	Location
D1	E-9
D2	F 5
D3	F-4
D4	F-4
D5	B-4
D6	C-6
D7	C-7
D10	D-6
D11	D-7
D12	E-8
D13	D-8
D14	D-8
D21	B-4
D22	A-3
D23	B-4
D25	A-3
D26	C-4
D27	B-4
IC1	D-9
IC2	E 9
IC3	E-8
IC4	E-4
IC5	C-3
IC6	B-5
IC8	A-7
Q1	F-9
Q2	E-5
Q3	E-3
Q4	D-3
Q5	D-3
Q6	B-3
Q7	C-3
Q8	C-7
Q10	B-7
Q11	B-7
Q12	C 4
Q18	D-8
Q19	D-8
Q20	D-7
Q21	B-4
Q22	A-3
Q23	A-4
Q24	A-3
Q25	B-3
Q26	D-4
Q27	D-4
Q28	D-4
Q29	D-4
Q30	C-4
Q31	E-5
Q32	B-5
Q33	C-5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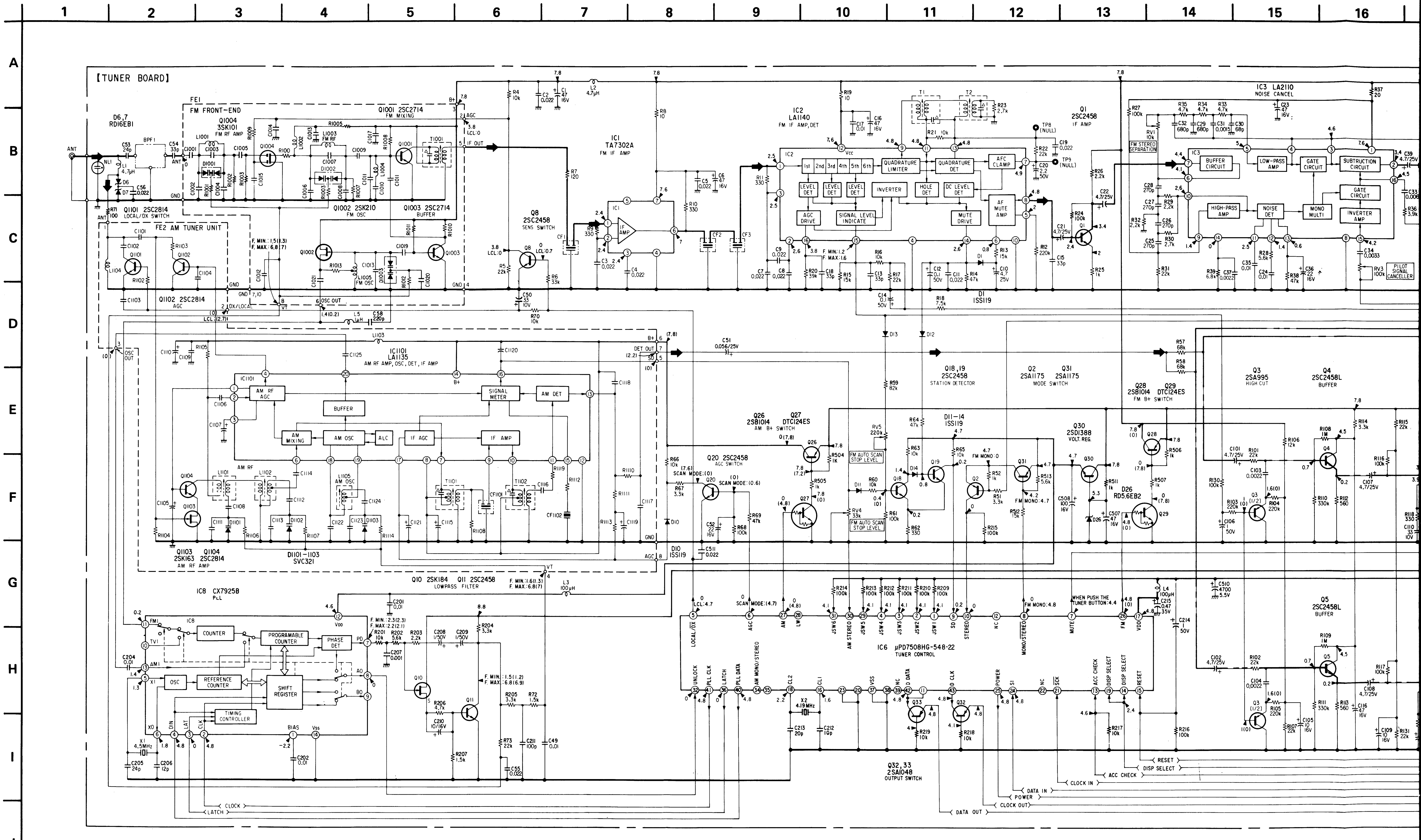
A
B
C
D
E
F
[TUNER BOARD]
BLU
POWER ANTENNA RELAY CONTROL
WHEN PUSH THE TUNER BUTTON: 0.6(BLK)
WHEN PUSH THE TUNER BUTTON: 0.6
WHEN PUSH THE TUNER BUTTON: 4.4
WHEN PUSH THE TUNER BUTTON: 4.4
BLK
WHT
RED
ANT
FE2
AM TUNER UNIT
FE1
FM FRONT-END
F. MIN.: 1.5(1.2)
F. MAX.: 6.8(6.9)
F. MIN.: 1.6(1.3)
F. MAX.: 6.8(7)
F. MIN.: 1.5(1.3)
F. MAX.: 6.8(7)
F. MIN: 2.3(2.3)
F. MAX: 1.5(1.2)
F. MIN: 1.2
F. MAX: 1.6
AEP MODEL ONLY
SCAN MODE: (0.6)
SCAN MODE: (4.7)
FM MONO: 4.8
LCL: 4.7
IC6
C503
C506
C508
C201
C208
C209
C55
C1
C2
L2
L3
IC8
IC1
IC3
IC4
IC5
X1
X2
X3
Q10
Q11
Q8
BPF1
CF1
CF2
RV1
RV3
RV4
RV5
T1
T2
TP5
TP9
TP10
TP12

1	ORG	DATA OUT
2	YEL	RESET
3	BLU	DISP SELECT
4	BRN	CLOCK OUT
5	BLK	GND
6	VIO	ACC CHECK
7	L/BLU	DATA IN
8	GRN	CLOCK IN
9	WHT	L-CH SIG.
10		GND
11	PNK	+12V
12	WHT	R-CH SIG.

MC-Service

3-4. SCHEMATIC DIAGRAM (New type)

- See page XT-16 for notes.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A
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G
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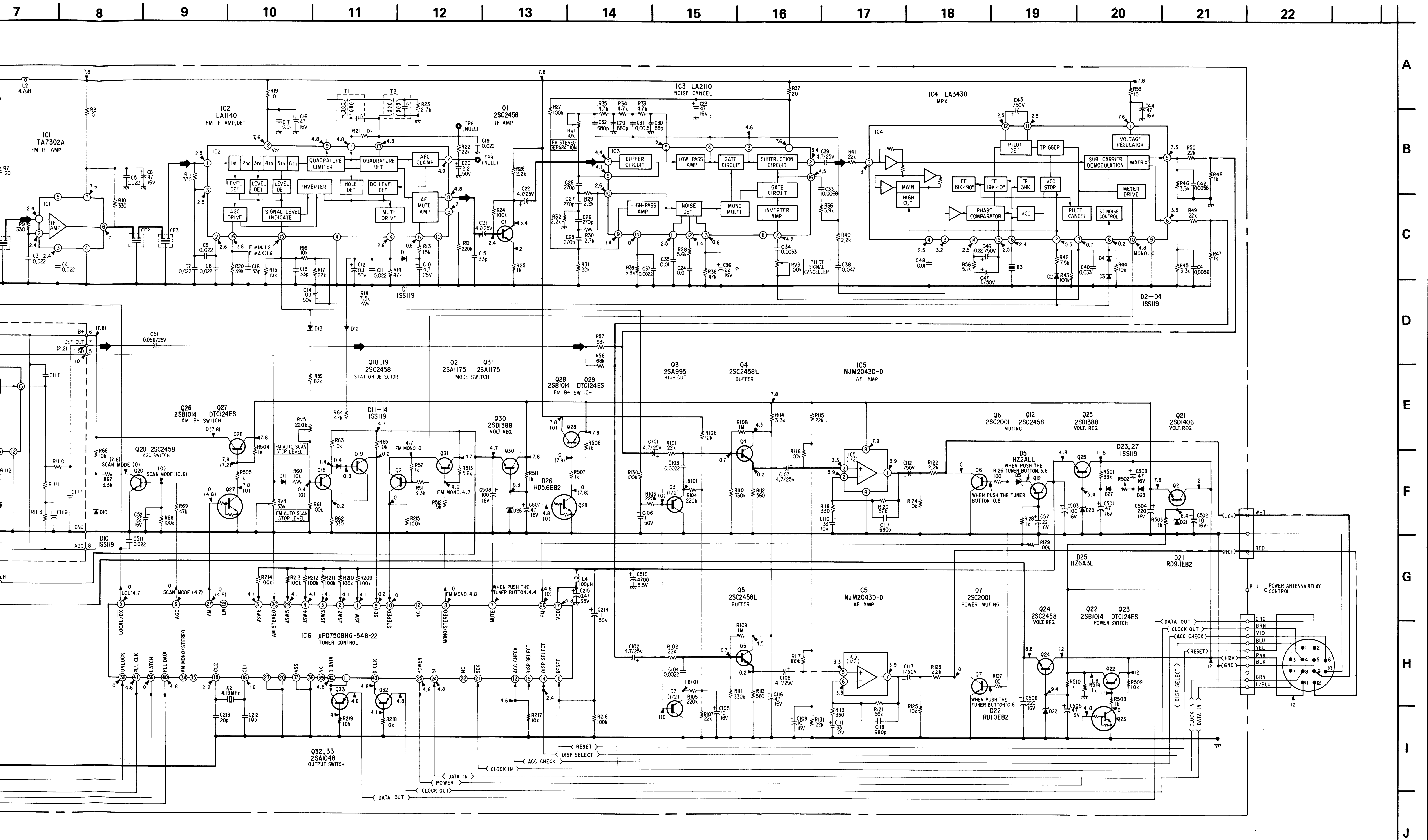
I
J
【TUNER BOARD】
FE1 FM FRONT-END
FE2 AM TUNER UNIT
D6,7 RD16EB1
ANT
BPF1
Q1004 3SK101 FM RF AMP
Q1001 2SC2714 FM MIXING
Q1002 2SK210 FM OSC
Q1003 2SC2714 BUFFER
Q1101 2SC2814 LOCAL/DX SWITCH
Q1102 2SC2814 AGC
Q1103 2SK163
Q1104 2SC2814
AM RF AMP
D1101-1103 SVC321
IF OUT
OSC OUT
DX/LOCAL
Q8 2SC2458 SENS SWITCH
IC1 TA7302A FM IF AMP
IF AMP
CF1
CF2
CF3
IC2 LA1140 FM IF AMP, DET
1st
2nd
3rd
4th
5th
6th
QUADRATURE LIMITER
QUADRATURE DET
AFC CLAMP
LEVEL DET
AGC DRIVE
SIGNAL LEVEL INDICATE
INVERTER
HOLE DET
DC LEVEL DET
MUTE DRIVE
AF MUTE AMP
TP8 (NULL)
TP9 (NULL)
Q1 2SC2458 IF AMP
IC3 LA2110 NOISE CANCEL
BUFFER CIRCUIT
LOW-PASS AMP
GATE CIRCUIT
SUBTRUCTION CIRCUIT
HIGH-PASS AMP
NOISE DET
MONO MULTI
INVERTER AMP
FM STEREO SEPARATION
PILOT SIGNAL CANCELLER
IC1101 LA1135 AM RF AMP, OSC, DET, IF AMP
AM RF AGC
BUFFER
SIGNAL METER
AM DET
AM MIXING
AM OSC
ALC
IF AGC
IF AMP
AM OSC
DET OUT
D10 1SS119
Q26 2SB1014 AM B+ SWITCH
Q27 DTC124ES
Q20 2SC2458 AGC SWITCH
Q18,19 2SC2458 STATION DETECTOR
FM AUTO SCAN STOP LEVEL
D11-14 1SS119
Q2 2SA1175
Q31 2SA1175
MODE SWITCH
Q30 2SD1388 VOLT. REG.
Q28 2SB1014
Q29 DTC124ES
FM B+ SWITCH
D26 RD5.6EB2
Q3 2SA995 HIGH CUT
Q4 2SC2458L BUFFER
Q5 2SC2458L BUFFER
IC8 CX7925B PLL
COUNTER
PROGRAMABLE COUNTER
PHASE DET
OSC
REFERENCE COUNTER
SHIFT REGISTER
TIMING CONTROLLER
X1 4.5MHz
Q10 2SK184
Q11 2SC2458
LOWPASS FILTER
IC6 μPD7508HG-548-22 TUNER CONTROL
LOCAL/DX
SCAN MODE
AGC
AM
LW
JSW6
AM STEREO
JSW5
JSW4
JSW3
JSW2
JSW1
SD
STEREO
NC
MONO/STEREO
MUTE
FM
VDD
WHEN PUSH THE TUNER BUTTON: 4.4
UNLOCK
PLL CLK
LATCH
PLL DATA
AM MONO/STEREO
CL2
CL1
VSS
D DATA
D CLK
POWER
SI
SCK
ACC CHECK
DISP SELECT
RESET
X2 4.19MHz
Q32,33 2SA1048 OUTPUT SWITCH
CLOCK
LATCH
RESET
DISP SELECT
ACC CHECK
CLOCK IN
DATA IN
POWER
CLOCK OUT
DATA OUT

MC-Service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14
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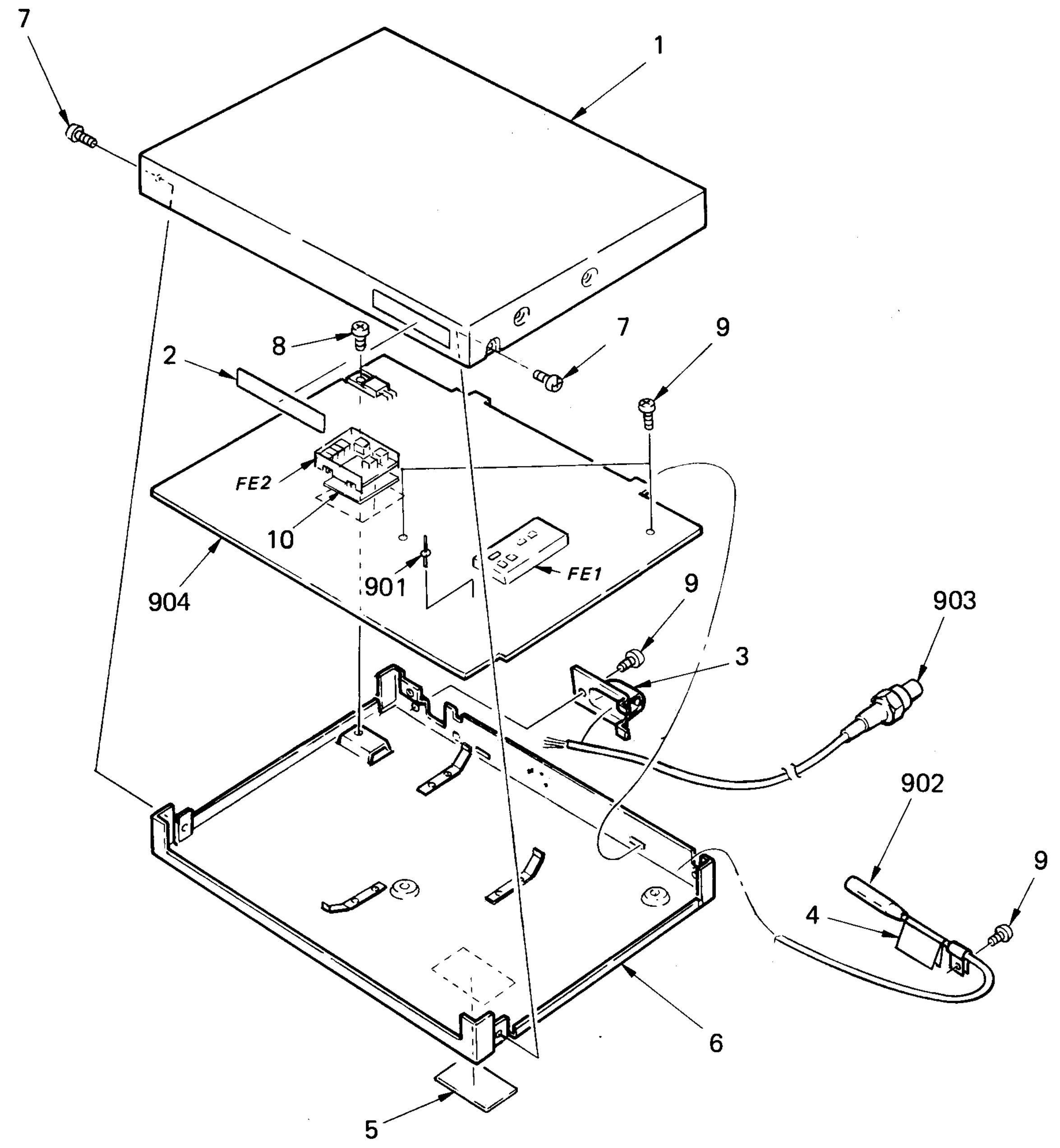
16
17
18
19
20
21
22
A
B
C
D
E
F
G
H
I
J
IC1 TA7302A FM IF AMP
IF AMP
CF2
CF3
IC2 LA1140 FM IF AMP, DET
1st
2nd
3rd
4th
5th
6th
QUADRATURE LIMITER
QUADRATURE DET
AFC CLAMP
LEVEL DET
INVERTER
HOLE DET
DC LEVEL DET
AF MUTE AMP
AGC DRIVE
SIGNAL LEVEL INDICATE
MUTE DRIVE
T1
T2
TP8 (NULL)
TP9 (NULL)
Q1 2SC2458 IF AMP
F. MIN: 1.2
F. MAX: 1.6
D1 1SS119
IC3 LA2110 NOISE CANCEL
FM STEREO SEPARATION
BUFFER CIRCUIT
LOW-PASS AMP
GATE CIRCUIT
SUBTRUCTION CIRCUIT
GATE CIRCUIT
INVERTER AMP
HIGH-PASS AMP
NOISE DET
MONO MULTI
PILOT SIGNAL CANCELLER
IC4 LA3430 MPX
PILOT DET
TRIGGER
SUB CARRIER DEMODULATION
MATRIX
VOLTAGE REGULATOR
MAIN
HIGH CUT
FF 19K∠90°
FF 19K∠0°
FF 38K
VCO STOP
PHASE COMPARATOR
VCO
PILOT CANCEL
ST NOISE CONTROL
METER DRIVE
MONO: 0
D2—D4 1SS119
D12
D13
Q18, 19 2SC2458 STATION DETECTOR
Q2 2SA1175
Q31 2SA1175 MODE SWITCH
Q28 2SB1014 FM B+ SWITCH
Q29 DTC124ES
Q3 2SA995 HIGH CUT
Q4 2SC2458L BUFFER
IC5 NJM2043D-D AF AMP
Q26 2SB1014 AM B+ SWITCH
Q27 DTC124ES
Q20 2SC2458 AGC SWITCH
SCAN MODE: (0)
SCAN MODE: (0.6)
D11-14 1SS119
FM AUTO SCAN STOP LEVEL
FM MONO: 0
FM MONO: 4.7
Q30 2SD1388 VOLT. REG.
D26 RD5.6EB2
Q6 2SC2001
Q12 2SC2458 MUTING
Q25 2SD1388 VOLT. REG.
Q21 2SD1406 VOLT. REG.
D5 HZ2ALL
WHEN PUSH THE TUNER BUTTON: 3.6
WHEN PUSH THE TUNER BUTTON: 0.6
D23, 27 1SS119
D10 1SS119
GND
AGC
B+
DET OUT
SD
D25 HZ6A3L
D21 RD9.1EB2
L-CH
R-CH
WHT
RED
BLU
POWER ANTENNA RELAY CONTROL
IC6 µPD7508HG-548-22 TUNER CONTROL
LOCAL/DX
LCL: 4.7
AGC
SCAN MODE: (4.7)
AM
LW
JSW6
AM STEREO
JSW5
JSW4
JSW3
JSW2
JSW1
SD
STEREO
NC
MONO/STEREO
FM MONO: 4.8
WHEN PUSH THE TUNER BUTTON: 4.4
MUTE
FM
VDD
UNLOCK
PLL CLK
LATCH
PLL DATA
AM MONO/STEREO
CL2
X2 4.19MHz
CL1
VSS
NC
D DATA
D CLK
POWER
S1
NC
SCK
ACC CHECK
DISP SELECT
DISP SELECT
RESET
Q32, 33 2SA1048 OUTPUT SWITCH
Q5 2SC2458L BUFFER
IC5 NJM2043D-D AF AMP
Q7 2SC2001 POWER MUTING
WHEN PUSH THE TUNER BUTTON: 0.6
D22 RD10EB2
Q24 2SC2458 VOLT. REG.
Q22 2SB1014
Q23 DTC124ES POWER SWITCH
DATA OUT
CLOCK OUT
ACC CHECK
RESET
+12V
GND
DISP SELECT
CLOCK IN
DATA IN
ORG
BRN
VIO
BLU
YEL
PNK
BLK
GRN
L/BLU
RESET
DISP SELECT
ACC CHECK
CLOCK IN
DATA IN
POWER
CLOCK OUT
DATA OUT

SECTION 4
EXPLODED VIEWS AND PARTS LIST

NOTE:
- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked " ★ " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The construction parts of an assembled part are indicated with a collation number in the remark column.

(1)



No.	Part No.	Description	Remarks
1	3-320-614-21	LID, UPPER	
2	*3-331-805-01	LABEL	
3	*3-320-587-01	STOPPER (C), CORD	
4	*3-331-963-01	LABEL, CAUTION	
5	*3-331-802-01	(US).........LABEL, MODEL NUMBER (US)	
	*3-331-803-01	(Canadian)...LABEL, MODEL NUMBER	
	*3-331-814-01	(AEP,E)......LABEL, MODEL NUMBER	
6	*X-3331-802-1	(US,Canadian,AEP,E)...LID ASSY, LOWER	
	X-3331-803-1	(G-AEP)........LID ASSY, LOWER	
7	7-682-545-04	SCREW +B 3X3	

No.	Part No.	Description	Remarks
8	7-621-770-87	SCREW +B 2.6X5	
9	7-685-750-04	SCREW +PTT 3X5 (S)	
10	3-327-119-01	INSULATOR, TU	
901	1-508-995-00	PIN, CONNECTOR	
902	1-557-627-11	CORD (WITH CONNECTOR)	
903	*1-558-345-11	CORD, CONNECTION	
904	*A-3266-298-A	(US,Canadian)...MOUNTED PCB, TU	
	*A-3266-320-A	(AEP,E).........MOUNTED PCB, TU	
FE1	1-463-418-00	FRONT END (FM)	
FE2	1-463-550-11	TUNER UNIT, AM	

SECTION 5
ELECTRICAL PARTS LIST

NOTE:
- Items marked " ★ " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuitsin a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:
MF:μF, PF:μμF.

RESISTORS
- All resistors are in ohms.
- F : nonflammable

COILS
- MMH : mH, UH : μH

SEMICONDUCTORS
In each case, U : μ, for example:
UA...: μA..., UPA...: μPA..., UPC...: μPC,
UPD...: μPD...

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
901	1-508-995-00	PIN, CONNECTOR			
902	1-557-627-11	CORD (WITH CONNECTOR)			
903	*1-558-345-11	CORD, CONNECTION			
904	*A-3266-298-A	(US,Canadian)...MOUNTED PCB, TU			
	*A-3266-320-A	(AEP,E).........MOUNTED PCB, TU			
BPF1	1-235-142-00	FILTER, BAND PASS			
C1	1-123-332-00	ELECT	47MF	20%	16V
C2	1-161-055-00	CERAMIC	0.022MF	10%	25V
C3	1-101-005-00	CERAMIC	0.022MF		50V
C4	1-101-005-00	CERAMIC	0.022MF		50V
C5	1-161-055-00	CERAMIC	0.022MF	10%	25V
C6	1-123-332-00	ELECT	47MF	20%	16V
C7	1-101-005-00	CERAMIC	0.022MF		50V
C8	1-101-005-00	CERAMIC	0.022MF		50V
C9	1-101-005-00	CERAMIC	0.022MF		50V
C10	1-123-616-00	ELECT	4.7MF	20%	25V
C11	1-101-005-00	CERAMIC	0.022MF		50V
C12	1-123-607-00	ELECT	0.1MF	20%	50V
C13	1-102-963-00	CERAMIC	33PF	5%	50V
C14	1-123-607-00	ELECT	0.1MF	20%	50V
C15	1-102-963-00	CERAMIC	33PF	5%	50V
C16	1-123-332-00	ELECT	47MF	20%	16V
C17	1-161-013-00	CERAMIC	0.01MF	10%	25V
C18	1-102-963-00	CERAMIC	33PF	5%	50V
C19	1-101-005-00	CERAMIC	0.022MF		50V
C20	1-123-612-00	ELECT	2.2MF	20%	50V
C21	1-123-616-00	ELECT	4.7MF	20%	25V
C22	1-123-616-00	ELECT	4.7MF	20%	25V
C23	1-123-821-00	ELECT	47MF	20%	16V
C24	1-101-004-00	CERAMIC	0.01MF		50V
C25	1-102-111-00	CERAMIC	270PF	10%	50V
C26	1-102-111-00	CERAMIC	270PF	10%	50V
C27	1-102-111-00	CERAMIC	270PF	10%	50V
C28	1-102-111-00	CERAMIC	270PF	10%	50V
C29	1-102-116-00	CERAMIC	680PF	10%	50V
C30	1-101-888-00	CERAMIC	68PF	5%	50V
C31	1-102-074-00	(US:up to serial No 13,900, Canadian:up to serial No A13,200)... CERAMIC	0.001MF	10%	50V
C31	1-102-119-00	(US:serial No 13,901 and later,Canadian: serial No A13,201 and later,AEP,E)... CERAMIC	0.0015MF	10%	50V
C32	1-102-116-00	CERAMIC	680PF	10%	50V
C33	1-161-049-00	CERAMIC	0.0068MF	10%	25V
C34	1-161-045-00	CERAMIC	0.0033MF	10%	25V

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
C35	1-101-004-00	CERAMIC	0.01MF		50V
C36	1-123-622-00	ELECT	22MF	20%	16V
C37	1-161-043-00	CERAMIC	0.0022MF	10%	25V
C38	1-161-059-00	CERAMIC	0.047MF	10%	25V
C39	1-123-616-00	ELECT	4.7MF	20%	25V
C40	1-161-057-00	CERAMIC	0.033MF	10%	25V
C41	1-161-048-00	CERAMIC	0.0056MF	10%	25V
C42	1-161-048-00	CERAMIC	0.0056MF	10%	25V
C43	1-123-611-00	ELECT	1MF	20%	50V
C44	1-123-332-00	ELECT	47MF	20%	16V
C45	1-136-141-00	(US:up to serial No 13,900, Canadian:up to serial No A13,200)... FILM	0.001MF	5%	50V
C46	1-123-612-00	(US:up to serial No 13,900, Canadian:up to serial No A13,200)... ELECT	2.2MF	20%	50V
C46	1-123-608-00	(US:serial No 13,901 and later,Canadian :serial No A13,201 and later,AEP,E)... ELECT	0.22MF	20%	50V
C47	1-123-613-00	(US:up to serial No 13,900, Canadian:up to serial No A13,200)... ELECT	3.3MF	20%	50V
C47	1-123-611-00	(US:serial No 13,901 and later,Canadian :serial No A13,201 and later,AEP,E)... ELECT	1MF	20%	50V
C48	1-101-004-00	CERAMIC	0.01MF		50V
C49	1-101-004-00	CERAMIC	0.01MF		50V
C50	1-123-645-00	ELECT	33MF	20%	10V
C51	1-161-022-00	ELECT	0.056MF	10%	25V
C52	1-123-622-00	ELECT	22MF	20%	16V
C53	1-102-960-00	CERAMIC	24PF	5%	50V
C54	1-102-963-00	CERAMIC	33PF	5%	50V
C55	1-161-055-00	CERAMIC	0.022MF	10%	25V
C56	1-101-005-00	CERAMIC	0.022MF		50V
C57	1-123-622-00	ELECT	22MF	20%	16V
C58	1-102-110-00	(US:serial No 13,901 and later,Canadian :serial No A13,201 and later,AEP,E)... CERAMIC	220PF	10%	50V
C101	1-123-616-00	ELECT	4.7MF	20%	25V
C102	1-123-616-00	ELECT	4.7MF	20%	25V
C103	1-161-043-00	CERAMIC	0.0022MF	10%	25V
C104	1-161-043-00	CERAMIC	0.0022MF	10%	25V
C105	1-123-617-00	ELECT	10MF	20%	16V
C106	1-123-611-00	ELECT	1MF	20%	50V
C107	1-123-616-00	ELECT	4.7MF	20%	25V
C108	1-123-616-00	ELECT	4.7MF	20%	25V
C109	1-123-617-00	ELECT	10MF	20%	16V

Ref.No.	P
C110	1-
C111	1-
C112	1-
C113	1-
C116	1-
C117	1-
C118	1-
C201	1-
C202	1-
C204	1-
C205	1-
C206	1-
C207	1-
C208	1-
C209	1-
C210	1-
C211	1-
C212	1-
C213	1-
C214	1-
C215	1-
C501	1-
C502	1-
C502	1-
C503	1-
C504	1-
C505	1-
C506	1-
C507	1-
C508	1-
C509	1-
C510	1-
C511	1-
CF1	1-
CF2	1-
CF2	1-
CF3	1-
CF3	1-
D1	8-7
D2	8-7
D3	8-7
D4	8-7
D5	8-7
D6	8-7
D7	8-7
D10	8-7
D11	8-7
D12	8-7
D13	8-7
D14	8-7
D21	8-7
D22	8-7
D23	8-7

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Remarks

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SECTION 5
ELECTRICAL PARTS LIST

NOTE:
- Items marked " ★ " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuitsin a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:
MF:μF, PF:μμF.

RESISTORS
- All resistors are in ohms.
- F : nonflammable

COILS
- MMH : mH, UH : μH

SEMICONDUCTORS
In each case, U : μ, for example:
UA...: μA..., UPA...: μPA..., UPC...: μPC,
UPD...: μPD...

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
901	1-508-995-00	PIN, CONNECTOR			
902	1-557-627-11	CORD (WITH CONNECTOR)			
903	*1-558-345-11	CORD, CONNECTION			
904	*A-3266-298-A	(US,Canadian)...MOUNTED PCB, TU			
	*A-3266-320-A	(AEP,E).........MOUNTED PCB, TU			
BPF1	1-235-142-00	FILTER, BAND PASS			
C1	1-123-332-00	ELECT	47MF	20%	16V
C2	1-161-055-00	CERAMIC	0.022MF	10%	25V
C3	1-101-005-00	CERAMIC	0.022MF		50V
C4	1-101-005-00	CERAMIC	0.022MF		50V
C5	1-161-055-00	CERAMIC	0.022MF	10%	25V
C6	1-123-332-00	ELECT	47MF	20%	16V
C7	1-101-005-00	CERAMIC	0.022MF		50V
C8	1-101-005-00	CERAMIC	0.022MF		50V
C9	1-101-005-00	CERAMIC	0.022MF		50V
C10	1-123-616-00	ELECT	4.7MF	20%	25V
C11	1-101-005-00	CERAMIC	0.022MF		50V
C12	1-123-607-00	ELECT	0.1MF	20%	50V
C13	1-102-963-00	CERAMIC	33PF	5%	50V
C14	1-123-607-00	ELECT	0.1MF	20%	50V
C15	1-102-963-00	CERAMIC	33PF	5%	50V
C16	1-123-332-00	ELECT	47MF	20%	16V
C17	1-161-013-00	CERAMIC	0.01MF	10%	25V
C18	1-102-963-00	CERAMIC	33PF	5%	50V
C19	1-101-005-00	CERAMIC	0.022MF		50V
C20	1-123-612-00	ELECT	2.2MF	20%	50V
C21	1-123-616-00	ELECT	4.7MF	20%	25V
C22	1-123-616-00	ELECT	4.7MF	20%	25V
C23	1-123-821-00	ELECT	47MF	20%	16V
C24	1-101-004-00	CERAMIC	0.01MF		50V
C25	1-102-111-00	CERAMIC	270PF	10%	50V
C26	1-102-111-00	CERAMIC	270PF	10%	50V
C27	1-102-111-00	CERAMIC	270PF	10%	50V
C28	1-102-111-00	CERAMIC	270PF	10%	50V
C29	1-102-116-00	CERAMIC	680PF	10%	50V
C30	1-101-888-00	CERAMIC	68PF	5%	50V
C31	1-102-074-00	(US:up to serial No 13,900, Canadian:up to serial No A13,200)... CERAMIC	0.001MF	10%	50V
C31	1-102-119-00	(US:serial No 13,901 and later,Canadian: serial No A13,201 and later,AEP,E)... CERAMIC	0.0015MF	10%	50V
C32	1-102-116-00	CERAMIC	680PF	10%	50V
C33	1-161-049-00	CERAMIC	0.0068MF	10%	25V
C34	1-161-045-00	CERAMIC	0.0033MF	10%	25V
C35	1-101-004-00	CERAMIC	0.01MF		50V
C36	1-123-622-00	ELECT	22MF	20%	16V
C37	1-161-043-00	CERAMIC	0.0022MF	10%	25V
C38	1-161-059-00	CERAMIC	0.047MF	10%	25V
C39	1-123-616-00	ELECT	4.7MF	20%	25V
C40	1-161-057-00	CERAMIC	0.033MF	10%	25V
C41	1-161-048-00	CERAMIC	0.0056MF	10%	25V
C42	1-161-048-00	CERAMIC	0.0056MF	10%	25V
C43	1-123-611-00	ELECT	1MF	20%	50V
C44	1-123-332-00	ELECT	47MF	20%	16V
C45	1-136-141-00	(US:up to serial No 13,900, Canadian:up to serial No A13,200)... FILM	0.001MF	5%	50V
C46	1-123-612-00	(US:up to serial No 13,900, Canadian:up to serial No A13,200)... ELECT	2.2MF	20%	50V
C46	1-123-608-00	(US:serial No 13,901 and later,Canadian :serial No A13,201 and later,AEP,E)... ELECT	0.22MF	20%	50V
C47	1-123-613-00	(US:up to serial No 13,900, Canadian:up to serial No A13,200)... ELECT	3.3MF	20%	50V
C47	1-123-611-00	(US:serial No 13,901 and later,Canadian :serial No A13,201 and later,AEP,E)... ELECT	1MF	20%	50V
C48	1-101-004-00	CERAMIC	0.01MF		50V
C49	1-101-004-00	CERAMIC	0.01MF		50V
C50	1-123-645-00	ELECT	33MF	20%	10V
C51	1-161-022-00	ELECT	0.056MF	10%	25V
C52	1-123-622-00	ELECT	22MF	20%	16V
C53	1-102-960-00	CERAMIC	24PF	5%	50V
C54	1-102-963-00	CERAMIC	33PF	5%	50V
C55	1-161-055-00	CERAMIC	0.022MF	10%	25V
C56	1-101-005-00	CERAMIC	0.022MF		50V
C57	1-123-622-00	ELECT	22MF	20%	16V
C58	1-102-110-00	(US:serial No 13,901 and later,Canadian :serial No A13,201 and later,AEP,E)... CERAMIC	220PF	10%	50V
C101	1-123-616-00	ELECT	4.7MF	20%	25V
C102	1-123-616-00	ELECT	4.7MF	20%	25V
C103	1-161-043-00	CERAMIC	0.0022MF	10%	25V
C104	1-161-043-00	CERAMIC	0.0022MF	10%	25V
C105	1-123-617-00	ELECT	10MF	20%	16V
C106	1-123-611-00	ELECT	1MF	20%	50V
C107	1-123-616-00	ELECT	4.7MF	20%	25V
C108	1-123-616-00	ELECT	4.7MF	20%	25V
C109	1-123-617-00	ELECT	10MF	20%	16V
C110	1-123-645-00	ELECT	33MF	20%	10V
C111	1-123-645-00	ELECT	33MF	20%	10V
C112	1-123-611-00	ELECT	1MF	20%	50V
C113	1-123-611-00	ELECT	1MF	20%	50V
C116	1-123-332-00	ELECT	47MF	20%	16V
C117	1-102-116-00	CERAMIC	680P	10%	50V
C118	1-102-116-00	CERAMIC	680P	10%	50V
C201	1-101-004-00	CERAMIC	0.01MF		50V
C202	1-101-004-00	CERAMIC	0.01MF		50V
C204	1-101-004-00	CERAMIC	0.01MF		50V
C205	1-102-802-00	CERAMIC	24PF	5%	50V
C206	1-102-510-00	CERAMIC	12PF	5%	50V
C207	1-102-074-00	CERAMIC	0.001MF	10%	50V
C208	1-123-611-00	ELECT	1MF	20%	50V
C209	1-123-611-00	ELECT	1MF	20%	50V
C210	1-123-617-00	ELECT	10MF	20%	16V
C211	1-102-106-00	CERAMIC	100PF	10%	50V
C212	1-102-947-00	CERAMIC	10PF	5%	50V
C213	1-102-958-00	CERAMIC	20PF	5%	50V
C214	1-123-611-00	ELECT	1MF	20%	50V
C215	1-131-345-00	TANTALUM	0.47MF	10%	35V
C501	1-123-332-00	ELECT	47MF	20%	16V
C502	1-123-332-00	(US:up to serial No 13,900,Canadian: up to serial No A13,200)... ELECT	47MF	20%	16V
C502	1-124-462-00	(US:serial No 13,901 and later,Canadian: serial No A13,201 and later,AEP,E)... ELECT	10MF	20%	16V
C503	1-124-445-00	ELECT	100MF	20%	16V
C504	1-123-321-00	ELECT	220MF	20%	16V
C505	1-123-821-00	ELECT	47MF	20%	16V
C506	1-123-321-00	ELECT	220MF	20%	16V
C507	1-123-821-00	ELECT	47MF	20%	16V
C508	1-124-445-00	ELECT	100MF	20%	16V
C509	1-123-821-00	ELECT	47MF	20%	16V
C510	1-124-936-11	ELECT	4700MF		5.5V
C511	1-161-055-00	CERAMIC	0.022MF	10%	25V
CF1	1-567-183-11	FILTER, CERAMIC			
CF2	1-567-183-11	(US,Canadian)...FILTER, CERAMIC			
CF2	1-567-415-11	(AEP,E).........FILTER, CERAMIC			
CF3	1-567-183-11	(US,Canadian)...FILTER, CERAMIC			
CF3	1-567-415-11	(AEP,E).........FILTER, CERAMIC			
D1	8-719-911-19	DIODE 1SS119			
D2	8-719-911-19	DIODE 1SS119			
D3	8-719-911-19	DIODE 1SS119			
D4	8-719-911-19	DIODE 1SS119			
D5	8-719-921-11	DIODE HZ2ALL			
D6	8-719-100-73	DIODE RD16EB1			
D7	8-719-100-73	DIODE RD16EB1			
D10	8-719-911-19	DIODE 1SS119			
D11	8-719-911-19	DIODE 1SS119			
D12	8-719-911-19	DIODE 1SS119			
D13	8-719-911-19	DIODE 1SS119			
D14	8-719-911-19	DIODE 1SS119			
D21	8-719-100-54	DIODE RD9.1EB2			
D22	8-719-100-57	DIODE RD10EB2			
D23	8-719-911-19	DIODE 1SS119			
D25	8-719-910-63	DIODE HZ6A3L			
D26	8-719-100-35	DIODE RD5.6EB2			
D27	8-719-911-19	DIODE 1SS119			
FE1	1-463-418-00	FRONT END (FM)			
FE2	1-463-550-11	TUNER UNIT, AM			
IC1	8-759-273-02	IC TA7302P			
IC2	8-759-811-40	IC LA1140			
IC3	8-759-800-17	IC LA2110			
IC4	8-759-801-21	(US:up to serial No 13,900,Canadian: up to serial No A13,200)...IC LA3376			
IC4	8-759-801-22	(US:serial No 13,901 and later,Canadian: serial No A13,201 and later,AEP,E)... IC LA3430			
IC5	8-759-700-04	IC NJM2043D-D			
IC6	8-759-107-82	IC UPD7508HG-548-22			
IC8	8-757-925-20	IC CX-7925B			
L1	1-408-559-00	MICRO INDUCTOR 4.7UH			
L2	1-408-559-00	MICRO INDUCTOR 4.7UH			
L3	1-408-575-00	MICRO INDUCTOR 100UH			
L4	1-408-575-00	MICRO INDUCTOR 100UH			
L5	1-410-316-11	(US:serial No 13,901 and later,Canadian: serial No A13,201 and later,AEP,E)... MICRO INDUCTOR 1UH			
NL1	1-519-294-00	LAMP, NEON			
Q1	8-729-606-33	TRANSISTOR 2SC2603F			
Q2	8-729-117-54	TRANSISTOR 2SA1175			
Q3	8-729-699-51	TRANSISTOR 2SA995			
Q4	8-729-334-58	TRANSISTOR 2SC1345			
Q5	8-729-334-58	TRANSISTOR 2SC1345			
Q6	8-729-811-21	TRANSISTOR 2SD1012			
Q7	8-729-811-21	TRANSISTOR 2SD1012			
Q8	8-729-606-33	TRANSISTOR 2SC2603F			
Q10	8-729-218-43	TRANSISTOR 2SK184-GR			
Q11	8-729-606-33	TRANSISTOR 2SC2603F			
Q12	8-729-606-33	TRANSISTOR 2SC2603F			
Q18	8-729-606-33	TRANSISTOR 2SC2603F			
Q19	8-729-606-33	TRANSISTOR 2SC2603F			
Q20	8-729-606-33	TRANSISTOR 2SC2603F			
Q21	8-729-400-81	TRANSISTOR 2SD1266-Q			
Q22	8-729-802-22	TRANSISTOR 2SB1014			
Q23	8-729-900-36	TRANSISTOR DTC124ES			
Q24	8-729-606-33	TRANSISTOR 2SC2603F			
Q25	8-729-802-34	TRANSISTOR 2SD1388			
Q26	8-729-802-22	TRANSISTOR 2SB1014			
Q27	8-729-900-36	TRANSISTOR DTC124ES			
Q28	8-729-802-22	TRANSISTOR 2SB1014			
Q29	8-729-900-36	TRANSISTOR DTC124ES			
Q30	8-729-802-34	TRANSISTOR 2SD1388			
Q31	8-729-117-54	TRANSISTOR 2SA1175			
Q32	8-729-117-54	TRANSISTOR 2SA1175			
Q33	8-729-117-54	TRANSISTOR 2SA1175			
R4	1-249-429-11	CARBON	10K	5%	1/6W
R5	1-247-863-91	CARBON	22K	5%	1/6W
R6	1-249-435-11	CARBON	33K	5%	1/6W
R7	1-247-809-00	CARBON	120	5%	1/6W
R8	1-247-783-00	CARBON	10	5%	1/6W
R9	1-247-819-00	CARBON	330	5%	1/6W

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R10	1-247-819-00	CARBON	330	5%	1/6W
R11	1-247-819-00	CARBON	330	5%	1/6W
R12	1-247-887-00	CARBON	220K	5%	1/6W
R13	1-247-859-00	CARBON	15K	5%	1/6W
R14	1-249-437-11	CARBON	47K	5%	1/6W
R15	1-247-859-00	CARBON	15K	5%	1/6W
R16	1-249-429-11	CARBON	10K	5%	1/6W
R17	1-249-433-11	CARBON	22K	5%	1/6W
R18	1-247-852-00	CARBON	7.5K	5%	1/6W
R19	1-247-783-00	CARBON	10	5%	1/6W
R20	1-247-869-00	CARBON	39K	5%	1/6W
R21	1-249-429-11	CARBON	10K	5%	1/6W
R22	1-249-433-11	CARBON	22K	5%	1/6W
R23	1-249-422-11	CARBON	2.7K	5%	1/6W
R24	1-249-441-11	CARBON	100K	5%	1/6W
R25	1-249-417-11	CARBON	1K	5%	1/6W
R26	1-249-421-11	CARBON	2.2K	5%	1/6W
R27	1-249-441-11	CARBON	100K	5%	1/6W
R28	1-247-849-00	CARBON	5.6K	5%	1/6W
R29	1-249-421-11	CARBON	2.2K	5%	1/6W
R30	1-249-422-11	CARBON	2.7K	5%	1/6W
R31	1-249-433-11	CARBON	22K	5%	1/6W
R32	1-249-421-11	CARBON	2.2K	5%	1/6W
R33	1-249-425-11	CARBON	4.7K	5%	1/6W
R34	1-249-425-11	CARBON	4.7K	5%	1/6W
R35	1-249-425-11	CARBON	4.7K	5%	1/6W
R36	1-247-845-00	CARBON	3.9K	5%	1/6W
R37	1-247-790-00	CARBON	20	5%	1/6W
R38	1-249-437-11	CARBON	47K	5%	1/6W
R39	1-247-851-00	CARBON	6.8K	5%	1/6W
R40	1-249-421-11	CARBON	2.2K	5%	1/6W
R41	1-249-433-11	CARBON	22K	5%	1/6W
R42	1-247-852-00	CARBON	7.5K	5%	1/6W
R43	1-249-441-11	CARBON	100K	5%	1/6W
R44	1-249-429-11	CARBON	10K	5%	1/6W
R45	1-249-423-11	CARBON	3.3K	5%	1/6W
R46	1-249-423-11	CARBON	3.3K	5%	1/6W
R47	1-249-417-11	CARBON	1K	5%	1/6W
R48	1-249-417-11	CARBON	1K	5%	1/6W
R49	1-249-433-11	CARBON	22K	5%	1/6W
R50	1-249-433-11	CARBON	22K	5%	1/6W
R51	1-249-423-11	CARBON	3.3K	5%	1/6W
R52	1-249-417-11	CARBON	1K	5%	1/6W
R53	1-247-783-00	CARBON	10	5%	1/6W
R54	1-247-879-00	(US:up to serial No 13,900, Canadian:up to serial No A13,200)... CARBON	100K	5%	1/6W
R55	1-247-857-00	(US:up to serial No 13,900, Canadian:up to serial No A13,200)... CARBON	12K	5%	1/6W
R56	1-247-831-00	(US:up to serial No 13,900, Canadian:up to serial No A13,200)... CARBON	1K	5%	1/6W
R56	1-247-848-00	(US:serial No 13,901 and later,Canadian: serial No A13,201 and later,AEP,E)... CARBON	5.1K	5%	1/6W
R57	1-247-875-00	CARBON	68K	5%	1/6W
R58	1-247-875-00	CARBON	68K	5%	1/6W
R59	1-249-440-11	CARBON	82K	5%	1/6W

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R60	1-249-429-11	CARBON	10K	5%	1/6W
R61	1-247-879-00	CARBON	100K	5%	1/6W
R62	1-247-819-00	CARBON	330	5%	1/6W
R63	1-249-429-11	CARBON	10K	5%	1/6W
R64	1-249-437-11	CARBON	47K	5%	1/6W
R65	1-249-429-11	CARBON	10K	5%	1/6W
R66	1-249-429-11	CARBON	10K	5%	1/6W
R67	1-249-423-11	CARBON	3.3K	5%	1/6W
R68	1-249-441-11	CARBON	100K	5%	1/6W
R69	1-249-437-11	CARBON	47K	5%	1/6W
R70	1-249-429-11	CARBON	10K	5%	1/6W
R71	1-249-405-11	CARBON	100	5%	1/6W
R72	1-249-419-11	CARBON	1.5K	5%	1/6W
R73	1-249-433-11	CARBON	22K	5%	1/6W
R101	1-249-433-11	CARBON	22K	5%	1/6W
R102	1-249-433-11	CARBON	22K	5%	1/6W
R103	1-247-887-00	CARBON	220K	5%	1/6W
R104	1-247-887-00	CARBON	220K	5%	1/6W
R105	1-247-887-00	CARBON	220K	5%	1/6W
R106	1-247-857-00	CARBON	12K	5%	1/6W
R107	1-249-433-11	CARBON	22K	5%	1/6W
R108	1-247-903-00	CARBON	1M	5%	1/6W
R109	1-247-903-00	CARBON	1M	5%	1/6W
R110	1-247-891-00	CARBON	330K	5%	1/6W
R111	1-247-891-00	CARBON	330K	5%	1/6W
R112	1-249-414-11	CARBON	560	5%	1/6W
R113	1-249-414-11	CARBON	560	5%	1/6W
R114	1-249-423-11	CARBON	3.3K	5%	1/6W
R115	1-249-433-11	CARBON	22K	5%	1/6W
R116	1-249-441-11	CARBON	100K	5%	1/6W
R117	1-249-441-11	CARBON	100K	5%	1/6W
R118	1-247-819-00	CARBON	330	5%	1/6W
R119	1-247-819-00	CARBON	330	5%	1/6W
R120	1-247-873-00	CARBON	56K	5%	1/6W
R121	1-247-873-00	CARBON	56K	5%	1/6W
R122	1-249-421-11	CARBON	2.2K	5%	1/6W
R123	1-249-421-11	CARBON	2.2K	5%	1/6W
R124	1-249-429-11	CARBON	10K	5%	1/6W
R125	1-249-429-11	CARBON	10K	5%	1/6W
R126	1-249-405-11	CARBON	100K	5%	1/6W
R127	1-249-405-11	CARBON	100K	5%	1/6W
R128	1-249-417-11	CARBON	1K	5%	1/6W
R129	1-249-441-11	CARBON	100K	5%	1/6W
R130	1-249-441-11	CARBON	100K	5%	1/6W
R131	1-249-433-11	CARBON	22K	5%	1/6W
R201	1-249-429-11	CARBON	10K	5%	1/6W
R202	1-247-849-00	CARBON	5.6K	5%	1/6W
R203	1-249-421-11	CARBON	2.2K	5%	1/6W
R204	1-249-423-11	CARBON	3.3K	5%	1/6W
R205	1-249-423-11	CARBON	3.3K	5%	1/6W
R206	1-249-425-11	CARBON	4.7K	5%	1/6W
R207	1-249-419-11	CARBON	1.5K	5%	1/6W
R209	1-249-441-11	CARBON	100K	5%	1/6W
R210	1-249-441-11	CARBON	100K	5%	1/6W
R211	1-249-441-11	CARBON	100K	5%	1/6W
R212	1-249-441-11	CARBON	100K	5%	1/6W
R213	1-249-441-11	CARBON	100K	5%	1/6W

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R214	1-249-441-11	CARBON	100K	5%	1/6W
R215	1-249-441-11	CARBON	100K	5%	1/6W
R216	1-249-441-11	CARBON	100K	5%	1/6W
R217	1-249-429-11	CARBON	10K	5%	1/6W
R218	1-249-429-11	CARBON	10K	5%	1/6W
R219	1-249-429-11	CARBON	10K	5%	1/6W
R501	1-249-435-11	CARBON	33K	5%	1/6W
R502	1-249-417-11	CARBON	1K	5%	1/6W
R503	1-249-417-11	CARBON	1K	5%	1/6W
R504	1-249-417-11	CARBON	1K	5%	1/6W
R505	1-249-417-11	CARBON	1K	5%	1/6W
R506	1-249-417-11	CARBON	1K	5%	1/6W
R507	1-249-417-11	CARBON	1K	5%	1/6W
R508	1-249-417-11	CARBON	1K	5%	1/6W
R509	1-249-429-11	CARBON	10K	5%	1/6W
R510	1-249-417-11	CARBON	1K	5%	1/6W
R511	1-249-417-11	CARBON	1K	5%	1/6W
R512	1-247-859-00	CARBON	15K	5%	1/6W
R513	1-247-849-00	CARBON	5.6K	5%	1/6W
R514	1-249-417-11	(US:serial No 13,901 and later,Canadian: serial No A13,201 and later,AEP,E)... CARBON	1K	5%	1/6W
RV1	1-230-523-11	RES, ADJ, METAL GLAZE 10K			
RV2	1-226-703-00	(US:up to serial No 13,900,Canadian: up to serial No A13,200)... RES, ADJ, METAL·GLAZE 10K			
RV3	1-226-713-00	RES, ADJ, SOLID 100K			
RV4	1-226-712-00	RES, ADJ, SOLID 33K			
RV5	1-226-714-00	RES, ADJ, SOLID 220K			
T1	1-404-458-00	COIL, DISCRI (PRIMARY)			
T2	1-404-468-00	TRANSFORMER, DISCRIMINATOR			
X1	1-567-116-00	VIBRATOR, CRYSTAL			
X2	1-567-121-00	VIBRATOR, CRYSTAL			
X3	1-567-250-11	(US:serial No 13,901 and later,Canadian: serial No A13,201 and later,AEP,E)... OSCILLATOR, CERAMIC			

ACCESSORY & PACKING MATERIAL

Part No.	Description
*1-557-169-00	CORD (WITH CONNECTOR)(ANTENNA)
*1-558-197-11	CORD (WITH TERMINAL)
3-331-807-01	INDIVIDUAL CARTON
3-331-818-01	(AEP)...LABEL C/C
3-331-815-01	(G-AEP)...MARK (S)(LABEL), DBP
3-701-613-00	BAG, POLYETHYLENE
3-760-948-11	(AEP,E).........MANUAL, INSTRUCTION
3-760-948-21	(US,Canadian)...MANUAL, INSTRUCTION
3-760-948-41	(AEP)...........MANUAL, INSTRUCTION
3-760-948-31	(Canadian)......MANUAL, INSTRUCTION
3-764-460-01	(G-AEP)...INSTRUCTION
7-682-559-04	SCREW +B 4X5
X-3331-801-1	SCREW ASSY

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